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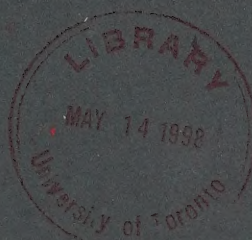
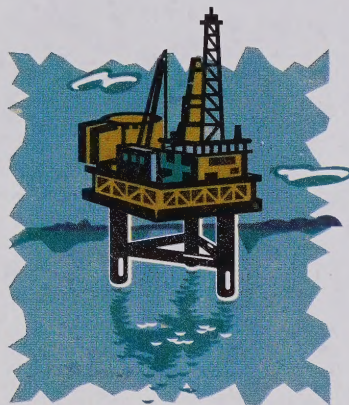


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1997 ANNUAL REPORT



NATIONAL ENERGY BOARD

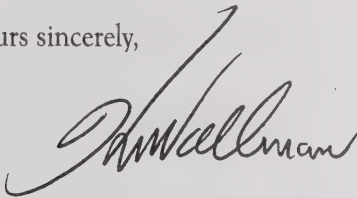
27 March 1998

The Honourable Ralph Goodale, P.C., M.P.
Minister of Natural Resources Canada
Ottawa, Ontario

Dear Mr. Goodale:

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 1997, in accordance with the provisions of Section 133 of the *National Energy Board Act*, R.S.C 1985, c. N-7.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'K. Vollman', with a large, sweeping flourish at the end.

Kenneth W. Vollman
Acting Chairman

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by the National Energy Board

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Covering Letter

The 1997 year was marked by a high workload, a significant change in Board membership and, after 12 years of skillful leadership, the retirement of Mr. Roland Priddle as Chairman.

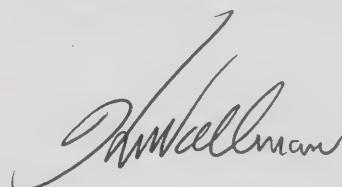
Mr. Priddle was appointed Chairman in the Fall of 1985, following his successful role as lead federal negotiator of the Western Accord and the Agreement on Natural Gas Markets and Prices between the federal government and the provinces of British Columbia, Alberta and Saskatchewan. These landmark agreements ended a long period of tight price and export controls over oil and natural gas, and set free the market forces that have facilitated the successful growth of the petroleum sector.

During Mr. Priddle's tenure, the Board maintained a consistent approach of regulating only when regulation was necessary and of letting market forces work where they could best serve the public interest. Notable achievements under his leadership included the implementation of the Market-Based Procedure in 1987, a new method by which the Board assesses whether natural gas exports are surplus to Canadian needs; the implementation of the Fair Market Access Procedure, an approach by which the Board assesses whether Canadians have a fair opportunity to purchase electricity on the same terms and conditions as those proposed for export; and the implementation of Guidelines for Negotiated Settlements. The latter, along with a workshop on incentive regulation which the Board hosted in 1993, were the stimuli that led to a number of negotiated agreements pursuant to which the tolls on the principal Board-regulated pipelines are now largely determined.

These achievements, among others, resulted in a simplification of the regulatory process and in a reduction of associated costs to Canadians, while still protecting the public interest with respect to energy exports, tolls on Board-regulated pipelines, and public safety and environmental concerns. The legacy of Mr. Priddle's leadership will remain for years to come and will be a guide to the current Board in its ongoing pursuit of making regulatory decisions that are fair, objective and respected.

I would also like to recognize Mr. Roy Illing and Mr. Robert Andrew, who left the Board last year after more than eight years and three years respectively of dedicated service as Board Members. Additional recognition goes to temporary Board Members Dr. Robert Fournier, who chaired the Joint Panel Review of the Sable Projects, and Dr. Richard Revel, who participated on a number of hearings during his term.

The Board had a very heavy workload in 1997. This arose due to the proposed development of the Sable Gas projects, an upsurge in industry activity in the Western Canada Sedimentary Basin, and industry's desire for more competitive transportation options. The Board successfully dealt with all applications that came before it, a remarkable achievement given that its workforce had been reduced to a twenty-year low. I would like to acknowledge the exceptional efforts of Board Members and staff in managing the workload over the past year. Despite this high workload, employees maintained an active involvement in the Calgary community, including participation in this year's United Way campaign for which they received a Bronze Award.



Kenneth W. Vollman



1997 Highlights

A DYNAMIC YEAR

During 139 days of oral hearings in 1997, the National Energy Board ("NEB" or "the Board") addressed a number of complex applications on a wide range of topics. This heavy workload was a direct result of the proposed development of a new natural gas producing basin in the offshore Atlantic, a high level of upstream industry activity, and the desire on the part of the upstream sector for more transportation options for oil, natural gas and natural gas liquids.

The proposed development of the Sable Gas projects off the coast of Nova Scotia raised a broad range of public interest considerations, including the appropriate distribution of economic benefits, environmental and safety issues, landowner concerns and a host of matters related to the location of facilities. The Board's participation in the public review process of the proposed projects resulted in 56 days of oral hearings in Nova Scotia and New Brunswick, and considerably stretched the Board's resources.

THE CHANGING REGULATORY ENVIRONMENT

A major theme in the ongoing evolution of the natural gas industry in Canada is increasing reliance on market mechanisms and market discipline to determine business decisions. In the last few years, futures contracts have been introduced for Alberta-based gas sales, electronic trading has increased, and more gas sales have moved to a 30-day basis, as opposed to traditional long-term sales contracts. The gas sales business is becoming more dominated by sophisticated large traders that deal in a North American market in all energy commodities.

The gas producing sector is pursuing the extension of market forces in the pipeline sector. This has been manifested, for example, in a number of proposals to bypass the Nova Gas Transmission Ltd. ("NGTL") system in Alberta and by proposals to construct privately-owned gas gathering and processing facilities in British Columbia. A group of producers also initially sponsored the Alliance pipeline project, a proposed

major new gas pipeline system that would provide an alternative to transportation on the existing systems owned by NGTL, Foothills PipeLines Ltd. ("Foothills") and TransCanada PipeLines Limited ("TransCanada").

Gas producers are also actively seeking ways to increase the value they receive for their natural gas liquids ("NGLs") production. This has been reflected in applications to the Board to construct new gas feeder lines, in an application to recognize that shippers are entitled to control the NGL stream in their gas, and in the Alliance proposal to carry NGLs in a "rich" gas solution to markets in the Chicago area.

In the oil sector, demand by refineries in Ontario for access to the lowest-priced oil supplies resulted in an application to the Board for reversal of Interprovincial Pipe Line Inc.'s ("IPL") Sarnia-Montreal pipeline. In 1997, some competition was introduced in the pipeline sector with the commencement of operation of the first major new oil pipeline in 40 years out of the Western Canada Sedimentary Basin, the Express pipeline.

The pipeline business has also evolved in recent years. Pipelines provide a wide range of innovative new services to shippers and, increasingly, their tolls are established within the framework of negotiated incentive agreements, rather than by traditional cost-of-service regulation. However, the decision-making environment in which pipelines operate has not evolved to the extent it has in the production and marketing sectors. The major pipelines in Canada still require regulatory oversight as they operate in an environment in which they possess considerable market power.

While industry is constantly striving for more cost-effective business solutions, Canadians have become more aware of safety and environmental issues associated with pipeline construction and operation. These concerns have been reflected by growing involvement of interested landowners and environmental groups in Board hearings related to new pipeline facilities.

Major changes are occurring in the electricity sector, characterized by the evolution of competitive markets. A key element of competitive electric power markets is

open access to transmission, allowing generators equal access to the power grid and providing purchasers with a choice of supplier. To date, Alberta is the only jurisdiction in Canada to have implemented a competitive framework for its electricity industry. As a result of industry restructuring, non-utility generators and neighbouring utilities are gaining limited access to transmission in some other provinces. Certain provinces, notably Québec, Ontario and Manitoba, are expected to divide their businesses into separate generation, transmission and distribution units. Restructuring may facilitate the introduction of competitive power markets in these provinces.

The Board has responded to the ongoing changes in the regulatory environment by adopting market solutions to regulation, wherever possible, while ensuring that the public interest with respect to safety, environment and other matters is protected.

MAJOR ACTIVITIES IN 1997

(i) New Pipeline Facilities

The most significant activity in which the Board was involved in 1997 was the public hearing on the Sable Gas projects. These projects included a proposal by Mobil Oil Canada Properties, Shell Canada Limited and others to develop six offshore gas fields in the area of Sable Island (the Sable Offshore Energy Project or "SOEP"). The SOEP application included a proposed pipeline to bring the gas to shore, a gas plant at Goldboro, Nova Scotia, a pipeline to ship natural gas liquids from the gas plant to Point Tupper, Nova Scotia and storage facilities for the NGLs at Point Tupper. In addition, a proposal was made by Maritimes and Northeast Pipeline Management Ltd. ("M&NE") to construct a pipeline to transport the gas stream from the gas plant through Nova Scotia and New Brunswick to markets in the Maritimes and the northeast United States.

Pursuant to an agreement concluded between the federal Departments of Environment and Natural Resources, the Nova Scotia Departments of Environment and Natural Resources, the NEB and the Canada-Nova Scotia Offshore Petroleum Board, the Board participated in a five-person Joint Public Review Panel. While three members of the NEB reviewed

aspects of the applications under the *National Energy Board Act* ("NEB Act") and one member of the Panel considered certain aspects as a Commissioner for the Canada-Nova Scotia Offshore Petroleum Board, all members of the Joint Review Panel considered the environmental and socio-economic effects of the projects pursuant to the *Canadian Environmental Assessment Act* ("CEA Act"). The purpose of the joint review was to provide a single review process for the applications and to reduce regulatory overlap and duplication.

The Joint Review Panel submitted its report to the Environment Ministers of Canada and Nova Scotia in October 1997. It found that, with appropriate mitigation measures, the proposed projects would not be likely to cause significant adverse environmental effects and that, subject to certain conditions, both projects could proceed. The report contained 46 recommendations on such items as conditions for construction of facilities, environmental protection and monitoring, hydrocarbon industrial development strategy, training and benefits, and financial regulation. The Government of Canada accepted the report, including all but one recommendation which was subsequently addressed by a condition in the NEB Certificate.

The Board approved the projects pursuant to its responsibilities under the NEB Act. The Board had received requests from Tatham Offshore Inc. ("Tatham") and Trans Québec & Maritimes Pipeline Inc. ("TQM") to delay the certification of the M&NE pipeline until such time as their applications for alternative pipeline projects could be heard. The Board denied these requests and stated that it would hear any other application in a separate hearing process. Gaz Métropolitain and Company, Limited Partnership and Consumers Gas Energy Inc. jointly filed an application for leave to appeal the Board's decision with the Federal Court of Appeal. Tatham also applied to the Court for Leave to Appeal the Board's decision. The Federal Court of Appeal subsequently dismissed these applications.

The approval of the Sable Gas projects signals the development of an important new gas supply basin in Canada and the introduction of an important new fuel in the Maritimes. Together with the Hibernia oil field, this marks a turning point in Atlantic Canada's net dependence on foreign energy supplies. It is possible

that, with time, the offshore Atlantic region will see considerable additional development. The Board will provide effective regulatory services, as required, as future development is considered.

In December, the Board approved an application by IPL to reverse the flow of Line 9, a pipeline originally constructed in 1976 to carry western Canadian crude oil from Sarnia to Montreal. The reversal, expected to be in operation by 1 July 1998, will allow refineries in southern Ontario to import offshore crude oil through the connecting facilities of Portland Pipeline Corporation and Montreal Pipe Line Limited. These imports will provide additional competition to crude oil produced in western Canada. In April, the Board also approved an application by IPL to reactivate 210 kilometres of pipeline to transport oil products from Sarnia to a terminal near Hamilton, Ontario.

The Board approved two new pipelines to carry NGLs from northeast B.C. to destinations in Alberta. The Federated Pipe Lines (Northern) Ltd. pipeline will transport crude oil and NGLs from Taylor, B.C. to a connecting pipeline at Belloy, Alberta. A pipeline to be built by Novagas Clearinghouse Pipelines Ltd. will carry NGLs from Taylor, B.C. to an interconnect near Boundary Lake, Alberta with a proposed pipeline which has received regulatory approval from the Alberta Energy and Utilities Board ("EUB").

The Board also approved an application by Amoco Canada Petroleum Company Ltd. on behalf of Dome Kerrobert Pipeline Ltd. and PanCanadian Kerrobert Pipeline Ltd. to construct an NGL pipeline from NGL extraction plants at Empress, Alberta to the IPL line near Kerrobert, Saskatchewan. The project will facilitate the transportation of increased volumes of NGLs to markets served by the IPL line in the midwest U.S. and southern Ontario.

In November and December, the Board conducted a public hearing with respect to an application by TQM to expand its system from Lachenaie, located east of Montreal, to East Hereford, near the Canada-US border. This project is of particular importance because it is the first project reviewed by the Board that is subject to a comprehensive study under the CEA Act. To facilitate public participation in this hearing, the Board modified its normal procedures and held pre-

hearing seminars in several locations, explaining the hearing process and parties' rights to participate.

In November, the Board commenced preliminary proceedings with respect to an application by Alliance Pipeline Company Ltd. ("Alliance") to construct a major new gas pipeline transportation system from northeast B.C. to the Chicago market area. This system would include a large system of laterals in Alberta along with the mainline facilities. The Alliance project sponsors propose to transport a "rich" gas solution that would include NGLs as a component of the gas stream, while introducing an alternative to gas transportation on the existing systems owned by NGTL, Foothills and TransCanada and providing an alternative market outlet for NGL production.

(ii) Tolls and Tariffs

In August, the Board approved an incentive-based negotiated settlement between Westcoast Energy Inc. ("Westcoast") and its shippers, pursuant to which the tolls on the company's facilities will be determined for the next five years. As part of the settlement, Westcoast and its shippers agreed to a number of principles for future upstream regulation. Ongoing negotiations are taking place to define a framework under which tolls and tariffs will be negotiated between Westcoast and its shippers, with a minimum of regulatory oversight.

With the approval of the Westcoast incentive settlement, the tolls on all of the major pipelines under the Board's jurisdiction are now determined to a large extent under the terms of negotiated settlements. Settlements have eliminated the need for costly annual rate hearings for the major pipeline companies and have helped align the interests of the pipelines and their shippers.

Although cost of service hearings have not been held for several years, a number of access and tariff issues still require arbitration by the Board. In January, the Board approved an application by PanCanadian Petroleum Limited ("PanCanadian") which requested that the Board direct IPL to receive, transport and deliver NGLs for PanCanadian. The Board also approved a number of tariffs for new pipeline facilities as well as a new tolling methodology for the reversal of IPL's Line 9. In response to a request by Novagas Canada Ltd. ("NovaGas"), the Board decided that Westcoast must amend its tariff to recognize that ship-

pers on its system are entitled to the NGLs contained in their gas. The amendments will enable shippers, should a proposed Novagas processing plant be built, to divert their gas to that facility.

The Board dealt with three tariff issues on TransCanada in the course of the year. In February, the Board approved an application to provide Multiple Handshake/Pooling Service ("MHPS") on a permanent basis. MHPS enables shippers to aggregate gas volumes at MHPS points by allowing them to perform multiple title transfers at those points. In July, the Board approved, for a one-year period, an application to provide Parking and Loans Service at market-based rates at all receipt and delivery points on its system. In December, the Board denied an application by TransCanada to acquire services from third-party providers to be resold to shippers on TransCanada's system. A number of parties had objected to TransCanada's application.

These applications are illustrative of the types of issues with which the industry is now grappling. Pipeline companies are seeking ways to enhance their revenue streams and provide more services to shippers. However, in so doing, potential questions will arise regarding the appropriate role of the pipeline in providing services, particularly if it is providing them in competition with shippers. In the next few years, additional issues may arise pertaining to the role of pipeline companies in providing ancillary services in competitive markets.

(iii) Exports

Natural Gas Exports

In 1996, the Board implemented a written hearing process to improve its efficiency in dealing with routine long-term gas export licence applications. This approach was continued in 1997, during which three written hearings were held.

In recent years, the Board has sent out a call for applications twice a year, following which the Board has considered gas export licence applications in semi-annual hearings. In late 1997, the Board invited comments on a proposal by which applications would be processed individually following receipt by the Board of a completed application. As well, the Board recom-

mended changes with respect to public notification of completed applications. If adopted, the proposal and notification would allow applicants to file applications at a time of their choosing and when they are sufficiently complete. It is the Board's intention that the level of scrutiny and adherence to the Board's Market-Based Procedure for examining such applications would not change.

Oil Exports

Crude oil is currently bought and sold only on a short-term basis. Under the NEB Act and pursuant to Board orders, heavy crude oil may be exported for periods of up to two years and light crude oil for up to one year. In 1997, the Board implemented a regulatory process to assess licence applications for the long-term export of crude oil. No applications have yet been made under this process.

Electricity Exports

During the past two years, the Board has issued several export permits to independent power marketers. In some cases, authorization has been granted to export power over any international line from any jurisdiction in Canada to customers in the U.S. Exports by marketers saw a marginal increase during 1997 but still account for less than one percent of Canada's total exports. The first sale to Mexico by a Canadian exporter took place in 1997.

To facilitate electricity exports, the Board has issued "blanket" permits which allow exporters to take advantage of market opportunities and make short-term export sales without additional Board approval. Most of these blanket permits are for ten-year periods and allow short-term exports under the blanket for up to five years. However, all exporters must still satisfy the Board's Fair Market Access criterion, which states that Canadian electricity buyers must have a fair opportunity to purchase electricity on similar terms and conditions, including price, as the electricity that is exported.

(iv) Pipeline Safety

In November 1996, the Board issued a report on an inquiry it conducted into Stress Corrosion Cracking (SCC): *Public Inquiry Concerning Stress Corrosion Cracking on Canadian Oil and Gas Pipelines*. The Inquiry report contained 27 recommendations

pertaining to the development of company-specific SCC management programs, changes to the design of pipelines, continued research into SCC, the development of an industry-wide SCC database, improved emergency response practices and information sharing.

All of the recommendations have either been implemented or are in the process of being implemented. The Board continues to work together with the pipeline industry through the Canadian Energy Pipeline Association ("CEPA") and the Canadian Association of Petroleum Producers ("CAPP") to ensure that the recommendations are fully implemented. In addition, the Board is coordinating its SCC-related activities with two provincial regulatory agencies, the EUB and the Technical Standards and Safety Authority of Ontario.

In keeping with a commitment made during the Inquiry, Board staff visited four communities in March and April 1997 to report on the findings of the SCC Inquiry. Sessions were held in three communities in Ontario (Vermilion Bay, Williamstown, and Ilderton) and one in Manitoba (Rapid City). In July, the Board released a document summarizing the meetings: *Staff Notes on the Community Meetings to Present the Findings of the National Energy Board's Stress Corrosion Cracking Inquiry*.

Revisions to the *Onshore Pipeline Regulations*, which set out technical, safety and environmental requirements for all stages of a pipeline's life cycle, were submitted to the Department of Justice. The revisions place increased emphasis on pipeline maintenance and

require companies to be proactive in managing risks.

In March, the Board hosted "Awareness '97", the first Public Awareness Workshop in Canada dedicated to safety issues on interprovincial pipelines. One hundred participants from industry and public agencies gathered to hear presentations of best practices delivered by public awareness specialists from five different companies. The feedback was positive, supporting future workshops that will continue to provide a forum for industry representatives responsible for pipeline and public safety.

(v) Environment

The Board continued its work to improve harmonization of the requirements of the CEA Act into NEB Act procedures. Discussions were held with the Canadian Environmental Assessment Agency (the "Agency") regarding approaches to fulfil the Board's obligations for preparing a Comprehensive Study Report and to streamline the assessment process. In the latter area, the Board proposed amendments to the *Exclusion List Regulations* to the Agency.

To reduce overlap and duplication, and to provide a single window approach to environmental assessment, the Board and the Agency discussed a proposed agreement which would substitute the NEB hearing process for the environmental assessment conducted by an Agency review panel. Draft criteria for substitution were agreed to and issued by the Agency for public comment.

Applications



Each year, the Board deals with approximately 750 applications filed under the NEB Act, including applications for:

- the construction and operation of pipeline facilities;
- pipeline tolls and tariffs;
- short-term orders for the export of oil and natural gas, and the importation of natural gas;
- permits for electricity exports; and
- long-term natural gas export licences.

Most applications are handled by internal processes that safeguard the public interest but do not result in a public hearing. Applications for short-term export orders, electricity permits and small-scale pipeline facility projects are dealt with in this manner. For applications that involve broad or significant public interest, the Board holds either oral or written public hearings.

The Board also processes applications under the *Canada Oil and Gas Operations Act* ("COGO Act"), which are discussed in the Operations section of this report.

PUBLIC HEARINGS

Over the 11 year period ending in 1996, the Board experienced a gradual decline in the number of oral hearing days. Correspondingly, staff levels also trended downward over this period (See Figure 1). The decline in oral hearing days was abruptly reversed in 1997. During the year, the Board held 14 oral hearings, sitting for a total of 139 days, which were hearing activity levels not seen since 1986. In this dynamic context, Board Members and staff were significantly challenged to fulfil the Board's obligation to consider applications on a timely basis.

Hearings in 1997 took place in Vancouver, Calgary, London, Montreal, Magog, Moncton, Fredericton, Antigonish and Halifax. The primary issues addressed at these hearings were:

New pipeline construction	7
Existing pipeline expansion and reactivation	3
Pipeline tolls and tariffs	3
Access to pipeline facilities	1

The Board also held three written hearings to consider applications for licences to export natural gas.

In 1997, the hearing to consider the Sable Offshore Energy Project and the Maritimes and Northeast Pipeline Project was convened for 56 days at four locations in New Brunswick and Nova Scotia. As previously mentioned, this was conducted by a five-person panel established pursuant to the Agreement for a Joint Public Review of the Proposed Sable Gas Projects among six departments and agencies of the Governments of Canada and Nova Scotia.

To facilitate public participation in the hearing process and to provide a better understanding of the Board's regulatory procedures, staff conducted seminars to explain the hearing process, routing issues and land acquisition matters. In 1997, these seminars were held in connection with the Alliance Pipeline Project as well as the TQM-Portland Natural Gas Transmission System ("PNGTS") proceedings.

ENVIRONMENTAL ASSESSMENT

The Board ensures that projects applied for under the NEB Act receive an appropriate degree of environmental assessment in accordance with that Act and, where applicable, the CEA Act. The degree of assessment depends on the scale and complexity of the likely environmental effects of a project. There are four types of environmental assessment: screening, comprehensive study, mediation and panel review.

The vast majority of projects are assessed through a screening process. For small-scale, routine projects, a screening may entail a brief review of the technical and environmental information provided by the applicant. Projects of the type identified on the *Inclusion List Regulations* of the CEA Act may require additional

information, expert advice from other federal departments and subsequent preparation of a more detailed screening document.

Large-scale and environmentally sensitive projects identified on the *Comprehensive Study List* of the CEA Act require a more rigorous assessment known as a comprehensive study. The TQM-PNGTS extension project, requiring about 213 kilometres of new right-of-way, underwent such a study. Projects for which interested parties are few and consensus is possible may be referred to mediation.

When it is determined that a project requires a greater degree of evaluation than is possible under a screening or a comprehensive study, it is referred to the Minister of the Environment for a review by a joint panel. The Sable Gas Projects were reviewed in this way, providing a forum for a large number of parties holding diverse views to present information and express their concerns.

In 1997, the Board carried out 114 environmental screenings, initiated two comprehensive studies and participated in a panel review. Projects for which screenings have been or are being conducted under the

CEA Act are listed in a national project registry and are maintained by the Canadian Environmental Assessment Agency ("the Agency"). The Board provides this information to the Agency's registry, as part of its responsibilities under the CEA Act.

Further information concerning the Board's role as a responsible authority under the CEA Act as well as its other environmental responsibilities can be found in the Board's August 1996 Information Bulletin IX, *Protection of the Environment*.

FINANCIAL REGULATORY AUDITS

The Board conducts financial regulatory audits of pipeline companies under its jurisdiction. These audits are a regulatory tool for ensuring companies have maintained their accounts in accordance with the Board's *Gas and Oil Uniform Accounting Regulations* and have complied with the NEB Act, and the Board's decisions and orders. Subject to overall workload and special needs, the Board attempts to audit, on an annual basis, Group I companies (see Supplement III) not regulated on a complaints basis. All other companies are subject to audits as circumstances dictate.

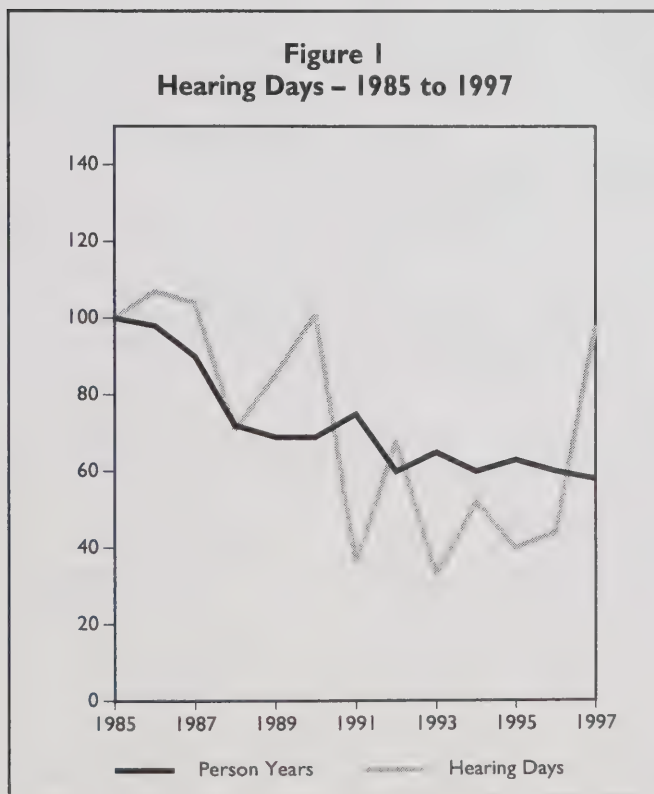
In 1997, the Board conducted just one audit - that of Foothills Pipe Lines Ltd. The Board considers 1997 an exception in this regard and does not plan to lessen the importance it places on financial regulatory audits.

CYCLE TIMES

The Board strives to process applications as quickly as possible, while ensuring that all relevant public interest matters are duly considered. Depending on the completeness of the applications and the complexity of the issues raised, applications for short-term export orders are normally processed in two days and applications for small-scale pipeline facilities are usually processed in less than seven weeks.

In 1997, the Board took an average of 32 weeks to process applications considered by oral hearing. The 1997 cycle time was longer than that in 1996. This was primarily due to the unprecedented number and complexity of applications that the Board had to consider. The longer cycle time also reflects the changing role and evolving nature of hearings, as well as new environmental processes. In the case of tolls and

Figure 1
Hearing Days - 1985 to 1997



tariff proceedings, processing time may be extended since applicants often continue to negotiate with interested parties and try to resolve issues by consensus after applications have been filed.

New pipeline construction and existing pipeline construction often raised complex environmental issues in 1997. Certain environmental effects, including those pertaining to health and socioeconomic conditions or cultural heritage, as well as issues such as cumulative effects, were being considered by the Board while using processes which are continuously evolving. Consequently, it took 79 weeks to process applications for the Sable Gas Projects, in part because they involved a joint panel review with representatives from several regulatory jurisdictions. The hearing was held in the Maritimes where many concerned groups and individuals were exposed to new regulatory procedures involving major energy pipeline projects.

In 1997, applications for long-term natural gas export licences took an average of 31 weeks to process. The Board's benchmark for this type of written hearing is 25 weeks. The 1997 hearings exceeded that because of issues specific to those proceedings.

REGULATORY DEVELOPMENT

The Board's *Guidelines for Filing Requirements* were modified in December 1997 to ensure that project-specific supply information required under Part II of the

Guidelines is in line with current Board practices, which have evolved to reflect the changing nature of the industry. Further, in October 1997, the Board sought public comments on a proposal from CEPA for an enhanced landowner participation process.

In December 1997, the Board issued a new procedure for the licensing of long-term exports of crude oil and equivalent, using the Fair Market Access procedure. The Board is also proceeding with recommendations that the Governor-in-Council approve amendments to its *Part VI (Oil and Gas) Regulations* to ensure they are consistent with the new market-based approach to regulating the long-term exportation of crude oil.

For information on other regulatory developments, please see the Operations section of this Report.

1997 HEARINGS, PUBLIC MEETINGS AND REVIEWS

The following tables summarize the public hearings, public meetings and reviews that were held in 1997. In addition to these proceedings, the Board received a number of applications in 1997 that have been set down for hearing in 1998.

I. PUBLIC HEARINGS

Pipeline Facilities

Applicants	Applications	Hearings	Decisions
Federated Pipe Lines (Northern) Ltd. (Application dated 12 November 1996)	Construct 172 kilometres (106 miles) of pipeline to transport crude oil, segregate condensate, ethane plus and propane from Taylor, British Columbia to Belloy, Alberta. Estimated Cost: \$40.8 million.	OH-3-96 - Hearing held from 24 to 27 February in Calgary, Alberta (four days).	Reasons for Decision dated April Approved
Interprovincial Pipe Line Inc. (Application dated 15 November 1996)	Reactivate approximately 210 kilometres (130 miles) of oil product pipeline from the Sarnia Terminal to Millgrove Junction near Hamilton, Ontario. The line is known as Line 8. Estimated Cost: \$1.47 million.	OH-4-96 - Hearing held from 27 to 31 January in London, Ontario (four days).	Reasons for Decision dated April Approved
Novagas Clearinghouse Pipelines Ltd. (Application dated 20 November 1996)	Construct approximately 58 kilometres (35 miles) of natural gas liquids pipeline from Taylor, British Columbia to a Novagas metering station in Alberta. Estimated Cost: \$8 million.	OH-2-96 - Hearing held from 10 to 12 February in Calgary, Alberta (three days). At the conclusion of the hearing, Novagas added pumping facilities to its application. As a result, a re-hearing was held on 12 and 13 March in Calgary, Alberta (two days).	Reasons for Decision dated April Approved
Amoco Canada Petroleum Company Ltd. on behalf of Dome Kerrobert Pipeline Ltd. and PanCanadian Kerrobert Pipeline Ltd. (Application dated 9 April)	Construct 155 kilometres (96 miles) of natural gas liquids pipeline Empress, Alberta to Kerrobert, Saskatchewan. Estimated Cost: \$23 million.	OH-1-97 - Hearing held on 16 June in Calgary, Alberta (one day).	Reasons for Decision dated July Approved
Mobil Oil Canada Properties et al (SOEP) and Maritimes & Northeast Pipeline Management Ltd. (M&NE) (Applications dated 30 May and 7 October respectively).	SOEP - Develop gas fields in the area of Sable Island, construct a pipeline to shore, construct a gas plant in Goldboro, Nova Scotia, construct a natural gas liquids pipeline from the gas plant to Point Tupper, Nova Scotia and storage facilities for the NGL at Point Tupper.	GH-6-96 - Hearing held in Halifax, Nova Scotia and Fredericton, New Brunswick from 7 April to 14 July (54 days). Informal hearings were also held in Antigonish, Nova Scotia and Moncton, New Brunswick on 4 and 5 April.	Joint Public Review Panel recommendations dated October Recommendations approved by the Governor in Council on 3 December
	M&NE - Construct a natural gas pipeline from Goldboro to St. Stephen, New Brunswick. Estimated Cost: \$583 million.	A five person panel was established to consider the applications pursuant to the Agreement for a Joint Public Review of the Proposed Sable Gas Projects.	NEB Reasons for Decision dated December Approved
TransCanada PipeLines Limited (Application dated 13 May, as amended)	Construct facilities through Saskatchewan, Manitoba and Ontario in 1998. Estimated Cost: \$824.9 million.	GH-2-97 - Hearing held from 22 September to 1 October in Calgary, Alberta (six days).	Reasons for Decision dated December Approved
Interprovincial Pipe Line Inc. (Application dated 1 May)	IPL: Reverse oil pipeline Line 9 from Montreal, Quebec to Sarnia, Ontario. Estimated Cost: \$89 million.	OH-2-97 - Hearing held from 5 August to 10 September in London, Ontario and Calgary, Alberta (21 days).	Reasons for Decision dated December
United Refining Company (Application dated 17 July)	United: Designate a priority destination on Interprovincial's Line 10 during periods when Line 7 is in apportionment.		Approved Line 9 reversal and denied United's application

Applicants	Applications	Hearings	Decisions
Trans Québec & Maritimes Pipeline Inc. (Application dated 30 April)	Construct 213.2 kilometres (132.2 miles) of natural gas pipeline from Lachenaie, Quebec to the New Hampshire Border near Pittsburg in the United States. Estimated Cost: \$270 million.	GH-1-97 - Hearing held from 17 November to 17 December in Montreal and Magog, Quebec (19 days)	Decision Pending
Alliance Pipeline Ltd. (Application dated 3 July)	Construct 1 565 kilometres (970 miles) of natural gas pipeline from Gordondale, Alberta to Elmore, Saskatchewan and 770 kilometres (480 miles) of laterals in British Columbia and Alberta. Estimated Cost: \$1.9 billion.	GH-3-97 - Pre-hearing conference held from 17 to 26 November in Calgary, Alberta to consider several motions (six days). Official hearing to commence on 6 January 1998 in Calgary, Alberta.	Decisions on the motions rendered on 24, 25 and 26 November

Traffic, Tolls and Tariffs

Applicants	Applications	Hearings	Decisions
PanCanadian Petroleum Limited (Application dated 26 July 1996)	Require Interprovincial Pipe Line Inc. to transport natural gas liquids.	MH-4-96 - Hearing held from 4 to 13 November 1996 in Calgary, Alberta (six days).	Reasons for Decision dated January Approved
Westcoast Energy Inc. (Application dated 6 November 1996, amended on 20 May)	Approve a five-year incentive-based negotiated settlement on tolls, or methodology for determining tolls for the period 1 January 1997 to 31 December 2001.	RH-2-97 - Hearing held from 23 to 27 June in Vancouver, British Columbia (four days).	Reasons for Decision dated August (two volumes) Approved
TransCanada PipeLines Limited (Application dated 19 March, as amended - Application dated 6 May)	19 March Application - Approve new tolls effective 1 January. 6 May Application - Approve FST conversion proposal.	RH-1-97 - Hearing held from 28 to 30 July in Calgary, Alberta (three days).	Reasons for Decision dated September Approved
Novagas Canada Ltd. (Application dated 12 May)	Requested hearing into the practices of Westcoast Energy Inc. with respect to gas stripping contract at Taylor, British Columbia.	MH-2-97 - Hearing held from 15 to 29 September in Calgary, Alberta (four days).	Reasons for Decision dated October Approved

Natural Gas Exports

Applicants	Applications	Hearings	Decisions
Coastal Gas Enron Capital PanEnergy Marketing ProGas Limited (three applications) United States Gypsum (Applications dated September 1996)	Applications to export some 9.5 billion cubic metres (333.4 billion cubic feet) of natural gas for periods ranging from 10 to 16 years.	GHW-2-96 - Written Hearing.	Reasons for Decision dated April Approved
Coastal Gas (two applications) Co-Energy Trading Enron Capital (three applications) Ranger Oil United States Gypsum Westcoast Gas Services (All applications dated February)	Applications to export some 29.6 billion cubic metres (1 040.0 billion cubic feet) of natural gas for 10-year periods.	GHW-1-97 - Written Hearing.	Reasons for Decision dated September Approved
Androscoggin Energy PanCanadian (two licences) ProGas (three licences) Vermont Gas Wascana Energy (All applications dated August)	Applications to export some 37.8 billion cubic metres (1.3 trillion cubic feet) of natural gas for 10-year periods.	GHW-2-97 - Written Hearing.	Decisions pending

Electricity Exports

Applicants	Applications	Decisions
Inland Pacific Energy Services (Application dated 28 October 1996)	Permits to export up to 2 000 gigawatt hours of energy on either a firm or interruptible basis for a 10-year period with no single export contract to exceed five years in duration.	Approved on 6 March
Montwegan International Energia Resorce Inc. (Application dated 24 February)	Permits to export up to 1 000 megawatts of firm power and up to 8 760 gigawatt hours of energy annually on either a firm or interruptible basis for a 10-year term but for periods not to exceed five years.	Approved on 8 May
James MacLaren Industries Inc. (Application dated 10 April)	Permits to export up to 1 000 megawatts of firm power and up to 8 760 gigawatt hours of energy annually on either a firm or interruptible basis for a 10-year period.	Approved on 16 July
Aquila Canada Corporation (Application dated 1 August)	Permits to export up to 5 000 gigawatt hours each of interruptible energy and short-term firm energy annually for a 10-year period with no single export contract to exceed five years in duration.	Approved on 3 December

Electric Power Line Facilities

Applicants	Applications	Hearings	Decisions
TransCanada Power Corp. (Application dated 24 September 1996)	Construct an international power line from a point on the international boundary near Wild Horse, Alberta to the Wild Horse Pump Station of Express Pipeline Ltd.	EH-1-96 - Hearing held on 9 and 10 December 1996 in Calgary, Alberta (two days).	Reasons for Decision dated January Approved

II. PUBLIC MEETINGS

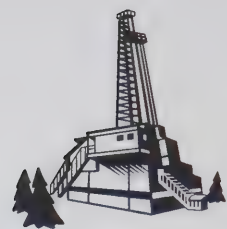
Applicants	Applications	Decisions
Stress Corrosion Cracking	Meetings held in March and April. The primary objective of the meetings was to present the findings of the SCC Inquiry. The Board released a staff report of the meetings entitled <i>Staff Notes on Community Meetings</i> on 24 July.	Rapid City, Manitoba Williamstown, Ontario Vermillion Bay, Ontario Ilderton, Ontario
Alliance Pipeline Ltd. Construct a natural gas pipeline from Alberta to Saskatchewan and laterals in British Columbia and Alberta	Meetings held in September. To facilitate participation in the Board's hearing process, Board staff conducted public seminars to explain hearing procedures, routing and land acquisition matters and to answer related questions.	Fort St. John, British Columbia Edmonton, Alberta Regina, Saskatchewan
Trans Québec & Maritimes Pipeline Inc. Construct a natural gas pipeline from Lachenaie, Quebec to East Hereford, Quebec.	Meetings held in September and October. To facilitate participation in the Board's hearing process, Board staff conducted public seminars to explain hearing procedures, routing and land acquisition matters and to answer related questions.	Coaticook, Quebec Magog, Quebec Granby, Quebec Sainte Julie, Quebec

III. REVIEWS

Under section 21 of the NEB Act, the Board may review, vary or rescind any decision or order made by it or rehear any application before deciding on it. The Board may initiate a review upon application by an interested party to a hearing or may initiate a review on its own. The following table summarizes the reviews undertaken in 1997.

Applicants	Applications	Decisions
Canadian Energy Pipeline Association (Submission dated 4 December 1996)	Review the Board's method for calculating the yearly rate of return on common equity as outlined in the Reasons for Decision RH-2-94 dated March 1995. The Board was of the view that reasonable doubt had been raised as to the correctness of the order issued as a result of the RH-2-94 Decision and decided to conduct a review of the order.	Letter decision dated 14 March The Board amended the general order issued as a result of RH-2-94.
TransGas Limited (Application dated 7 February)	Review and variance of the Board decision dated 4 February in which it approved an application by Interenergy Sheffield Processing Company (Canada) Ltd. to construct a 7 kilometre (4.3-mile) natural gas pipeline from Steelman, Saskatchewan to the United States. The Board was of the view that a doubt had been raised as to the correctness of its decision and conducted a review by way of written submissions.	On 27 March, the Board decided that it would not vary the order issued to Interenergy.
Mouvement Au Courant (MAC) (Application dated 17 January)	Review the Board's decision of 20 December 1996 to amend electricity permits issued to TransAlta Enterprises Corporation by allowing exports across all electricity transfer points on the international border. MAC advised the Board that it had not received the application of TransAlta and therefore had not filed a reply. As it appeared that there was no record of service of the TransAlta submission, the Board decided to review its decision.	On 20 May, the Board confirmed its decision approving the TransAlta application.
Rocky Mountain Ecosystem Coalition, Ms. "Zoa" C. T. Preston and Alberta Greens (Applications dated 26 and 28 June and 3 July, respectively)	Initiate a detailed review of all existing long term natural gas export licences. The parties suggested that the gas reserves underpinning existing licences may no longer be adequate to support those licences and, therefore, exports under those licences may no longer be in the public interest.	On 8 August, the Board dismissed the applications.
TransCanada PipeLines Limited (Application dated 6 August)	Review and clarify the Board's decision of 27 June in which it directed TransCanada, with respect to its application under section 58 of the NEB Act, to capitalize costs for recoating of long sections of pipe and expense investigative digs and recoating short sections of pipe. TransCanada was unclear as to the criteria used in determining whether a particular recoating should be capitalized or expensed. TransCanada provided a proposal which would establish a definitive cut-off point between expensing and capitalizing pipeline recoating costs. The Board sought comments from interested parties on TransCanada's proposal.	On 18 December, the Board approved TransCanada's proposal.

Commodities



The majority of Canada's petroleum and natural gas production is transported by NEB-regulated pipelines; in addition, all energy exports must receive approval by the Board. As an expert regulatory tribunal, and in order to make decisions that are fair, objective and respected, the NEB must have sound knowledge of energy matters relevant to its mandate. To maintain its knowledge of the energy industry, the Board monitors energy supply and markets on an ongoing basis and publishes its findings in various reports. The following provides a summary of Canadian energy supply, consumption, production, prices and trade over the last five years, with an emphasis on 1997 data and activities.

Energy production and consumption continued to increase slightly during 1997. Canadian energy exports also increased marginally, and were a significant portion of energy production. Heavy crude oil production increased, while conventional light oil production declined slightly. Additions to conventional light crude oil reserves also declined, resulting in lower remaining reserves; however, bitumen reserves increased.

Although natural gas production remained similar to 1996 levels, reserves additions declined, resulting in a slight reduction of remaining reserves. Export volumes for both crude oil and natural gas were restricted by pipeline capacity. Oil prices were similar to 1996, and natural gas prices continued to be below average U.S. market prices. Exports of electricity reached record levels in 1997. For greater detail, statistical appendices have been prepared as a companion document to the Annual Report (see the Appendices list in Supplement V).

ENERGY AND THE ECONOMY

Canada is a country endowed with large reserves of energy resources such as petroleum, natural gas, coal and hydroelectric potential. By drawing on these resources, the energy sector has come to play an important role in the Canadian economy. In 1997, energy production accounted for 7.5 percent of total Gross Domestic Product ("GDP"), and 11 percent of total merchandise exports, and employed almost 300,000 Canadians.

Canadian energy production has expanded 18 percent since 1993. Natural gas has led the way, with production volumes rising 29 percent over the last four years. Natural gas and petroleum made up the bulk (72 percent) of total energy production in Canada in 1997 (Table 1). Strong production levels have been stimulated by healthy growth in the North American economies.

Canada's energy consumption is traditionally quite high due to its northern climate, its energy intensive, resource-based economy and the long distances between population centres. Domestic energy demand has been growing at roughly three percent per annum since 1993, which results in an 11 percent increase in total Canadian consumption over the last four years. Two-thirds of energy needs were satisfied by two fuels: natural gas and petroleum (Table 1). Regarding end uses of Canadian energy demand, 40 percent of the energy consumed went to space heating and transportation requirements (Table 2).

In the North American energy market, Canada generates a large energy trade surplus which, through the 1990s, has yielded increasingly higher revenues (Figure 2). Crude oil and products exports contributed \$13.6 billion in revenues in 1997, down from \$14.7 billion in 1996; however, this value was offset by substantial imports of \$12 billion, leaving a trade surplus of \$1.6 billion. Natural gas generated export revenues of \$9.1 billion. This was less than the export revenues generated by petroleum, yet natural gas

Table 1
Domestic Energy Production by Energy Source
(Petajoules)

	1993	1994	1995	1996	1997(a)
Petroleum	4 556	4 829	5 033	5 283	5 449
Natural Gas	4 885	5 294	5 592	5 890	6 316
Hydroelectricity	1 153	1 175	1 190	1 214	1 242
Nuclear	1 064	1 221	1 108	1 155	956
Coal	1 651	1 735	1 799	1 817	1 855
Renewables and Other	500	541	589	612	504
Total	12 827	13 825	14 854	15 367	16 321

(a) Estimates

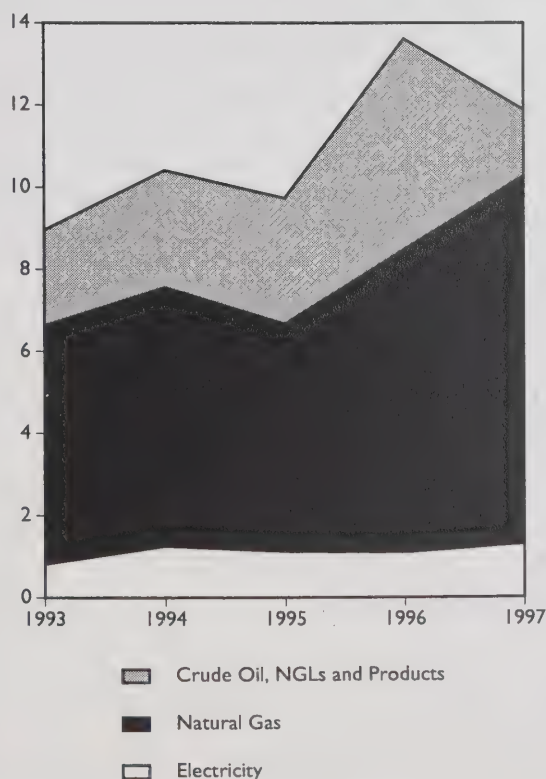
contributed \$9.0 billion to the total trade surplus, which surpassed petroleum since Canada imports little natural gas. In 1997, total export earnings for natural gas, petroleum and electricity were valued at \$24.1 billion; this translated into an energy trade surplus of \$11.9 billion.

Table 2
Domestic Energy Consumption by End Use
(Petajoules)

	1993	1994	1995	1996	1997(a)
Space Heating	1 869	1 886	1 918	1 961	2 063
Transportation	1 917	2 027	2 073	2 146	2 198
Other Uses	3 231	3 320	3 454	3 563	3 635
Non-Energy Use	735	745	727	744	850
Electricity Generation(b)	1 827	1 979	2 029	2 141	1 920
Total	9 579	9 957	10 201	10 554	10 666

- a) Estimates
b) Includes energy used for providing space cooling, ventilation as well as a variety of uses in the industrial sector
c) Includes energy used for petrochemical feedstock, asphalt and lubricants
d) Includes producer consumption and loss

Figure 2
Net Energy Export Revenues
(\$ Billions)



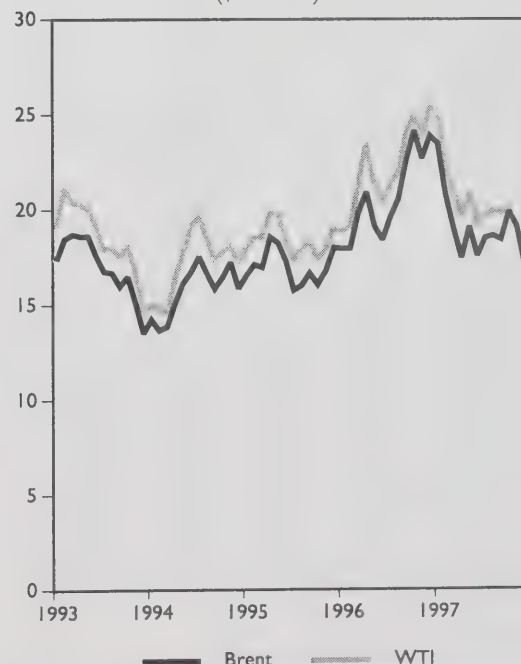
CRUDE OIL AND NATURAL GAS LIQUIDS

International Markets

World oil demand remained robust through most of 1997, increasing by about two percent over 1996. However, increased demand was more than matched by higher oil supply, which mostly originated from OPEC production.

The imbalance in demand and production was reflected in higher inventories and lower oil prices. The price for West Texas Intermediate at Cushing, Oklahoma (WTI) declined precipitously from a January peak of over U.S.\$25 per barrel to the U.S.\$19 to \$21 range by mid-year. Toward year-end, oil prices came under additional downward pressure. This was partly due to the actual supply and demand situation; however, market players were also anticipating the impact of such events as incremental volumes from Iraq, and the decline in oil demand in Southeast Asia that might eventually result from the emerging financial and economic disruption in that region. WTI averaged U.S.\$20.65 per barrel during 1997 and Brent (U.K.) averaged U.S.\$19.08 per barrel (Figure 3).

Figure 3
World Crude Oil Prices
(\$US/Barrel)



Production and Reserves Replacement

Canadian production of crude oil and equivalent set a new record of 329 000 cubic metres (2.1 million barrels) per day (Table 3), surpassing the previous record set in 1996. The growth in total crude oil production has been a major success story for the Canadian industry, as heavy crude oil production continued to increase substantially, while production rates of conventional light crude oil decreased marginally.

Heavy crude oil production has grown by over 50 percent since 1993, due mainly to the successful use of horizontal wells and innovative pumping technologies. On the other hand, total light crude oil production has fallen below the 1993 level.

Production records were set for both bitumen and heavy crude oil in 1997. Compared to 1996, heavy crude oil production increased by 15 percent; however, this increase was likely limited by pipeline capacity. Production of conventional light crude oil fell by seven percent, while synthetic crude oil and pentanes plus production increased marginally. The increase in drilling activity has offset the normal rate of decline of conventional production levels, and was partially responsible for the large increases in heavy oil production. NGL production increased by 16 percent since 1993, primarily due to higher natural gas production.

Table 3
Canadian Production of Crude Oil and Natural Gas Liquids

(thousand cubic metres per day)

	1993	1994	1995	1996	1997 ^(a)
Conventional Light	143.9	148.5	145.1	140.0	134.0
Synthetic Crude Oil	38.6	41.6	43.2	42.7	43.0
Pentanes Plus	23.7	24.6	25.8	26.4	27.0
Total Light	206.3	214.8	214.1	209.1	204.0
Conventional Heavy	61.5	65.7	73.4	82.3	87.0
In-situ Bitumen	20.9	21.2	23.7	26.2	38.0
Total Heavy	82.3	86.9	97.2	108.5	125.0
Total Crude Oil and Equivalent	288.6	301.7	311.3	317.6	329.0
Natural Gas Liquids	78.8	80.6	86.3	89.1	91.5

a) Estimates

Note: Totals may not add due to rounding

The Board's estimate of remaining conventional crude oil and crude bitumen reserves at year-end 1996 (the last year for which data is available), is 1 302.6 million cubic metres (8.2 billion barrels), up five percent from 1995, and is shown by province and territory in Table 4. Saskatchewan shows the largest increase in initial conventional reserves, which can be attributed to horizontal well drilling. Additions during 1996 replaced only 69 percent of production. In the past five years, only one year (1994) has had lower reserves replacement (Table 5). This was mainly due to the effort directed at production of oil from existing pools (development) rather than exploratory activity. Development activity represented 80 percent of all wells drilled.

While remaining established reserves are reduced by production each year, new discoveries, extensions to existing pools and revisions to reserves estimates in existing pools add to reserves. At year-end 1996, remaining reserves of conventional crude oil totalled 642 million cubic metres (4.0 billion barrels), a decrease

Table 4
Estimates of Established Reserves of Crude Oil and Bitumen at 31 December 1996

(million cubic metres)

	Initial	Remaining
Conventional Crude Oil		
British Columbia ^(a)	106.1	21.2
Alberta ^(a)	2 414.1	341.8
Saskatchewan ^(a)	630.6	150.6
Manitoba ^(a)	36.9	5.1
Ontario ^(a)	13.4	1.9
NWT and Yukon:		
Arctic Islands & Eastern Arctic Offshore ^(a)	0.5	0.0
Mainland Territories - Norman Wells	37.5	13.0
Nova Scotia ^(a) - Cohasset and Panuke	7.4	2.2
Newfoundland ^(a) - Hibernia	106.0	106.0
Total	3 352.6	641.8
Crude Bitumen		
Surface Mineable ^(b)	644.0	360.1
In-Situ ^(b)	390.6	300.7
Total	1 034.6	660.8
Total Conventional & Bitumen	4 387.1	1 302.6

a) Provincial agencies

b) AEUB and NEB common database

c) Provincial estimate for 31 December 1995, NEB updated to 31 December 1996

d) Canadian Association of Petroleum Producers

e) Bent Horn abandoned 1996

Note: totals may not add due to rounding

of four percent from 1995 (Table 5). From 1992 to 1996, on a cumulative basis, additions to established reserves of conventional light and heavy crude oil replaced 91 percent of production. Remaining reserves of bitumen in active projects were estimated to be 661 million cubic metres (4.2 billion barrels) at year-end 1996, representing an increase of 15 percent from 1995.

A significant event for crude oil in 1997 was production from the Hibernia field offshore Newfoundland. The first well commenced production in November 1997, 18 years after the discovery. A second production well was completed in December 1997. Production rates were approaching 9 540 cubic metres (60,000 barrels) per day by year-end. Oil reserves (included in Tables 4 and 5) estimated at Hibernia are 106 million cubic metres (667 million barrels). Production is being marketed to the U.S. Gulf Coast.

During 1997, a record high of 17,028 wells were drilled, an increase of 28 percent over 1996 (Figure 4). A total of 8,841 oil wells were completed during 1997, which was 33 percent more than the number completed in 1996. The majority of oil wells were development wells, an indication of the trend to increasing development of heavy oil projects, both for conventional heavy oil and in-situ bitumen.

The total land sale bonuses for Western Canada in 1997 reached \$1.51 billion, a new record exceeding that set in 1994 (Figure 5). A steady increase in the sale of oil sands rights has occurred since 1994, reaching \$183 million in 1997.

Crude Oil Exports

Total crude oil exports, including pentanes plus and synthetic, are estimated at 187 700 cubic metres (1.2 million barrels) per day, up 28 percent from 1993.

Figure 4
Number of Wells Drilled

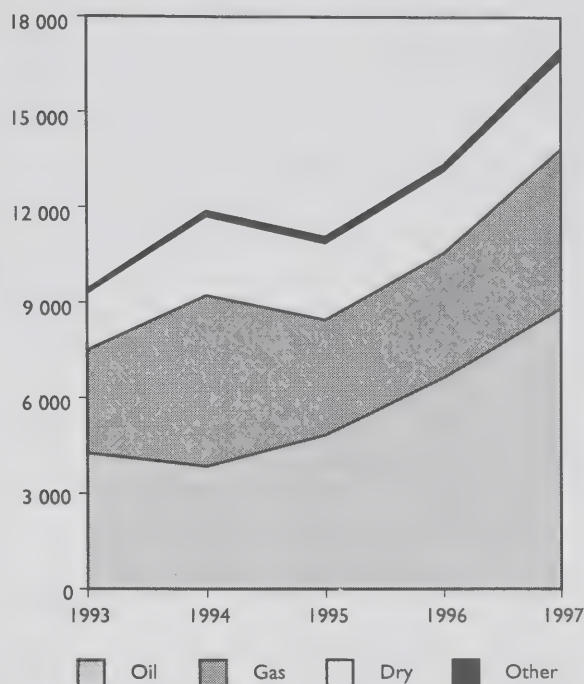


Figure 5
Sales of Exploration Rights in Western Canada

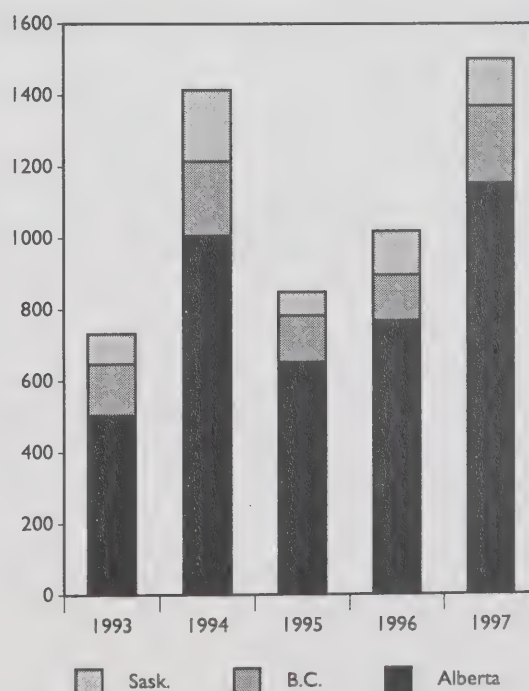


Table 5
Conventional Crude Oil Reserves, Additions and Production – 1992 to 1996

(million cubic metres)

	1992	1993	1994	1995	1996	Total
Additions	76	83	47	89	56	352
Production	72	75	78	88	81	386
Total Remaining Reserves	680	688	657	666	642	

The 1997 total was comprised of approximately 79 100 cubic metres (498,300 barrels) per day of light crude oil and equivalent and approximately 108 500 cubic metres (683,500 barrels) per day of blended heavy crude oil.

The estimated value of crude oil exports in 1997 was \$9.8 billion, compared with \$10.6 billion in 1996. Although export volumes increased, revenues declined as a result of lower oil prices in the latter part of the year. In 1997, the estimated average light and heavy crude oil export price was \$170.00 and \$125.00 per cubic metre (\$27.00 and \$19.85 per barrel) respectively, compared to the 1996 light and heavy crude oil export price of \$175.70 and \$149.80 per cubic metre (\$27.90 and \$23.80 per barrel), respectively (Figure 6).

The U.S. Midwest continued to be Canada's most important market followed by Montana and Washington (Figure 7). Smaller volumes were shipped from the east coast to the U.S. Gulf Coast and Rotterdam. The largest export buyers of light crude oil in 1997 were, by rank: Mobil Oil Corporation; Shell Oil Company; Sun Company Inc.; and Ashland Oil Inc. For heavy crude oil, the largest foreign buyers were

Koch Refining Company, Amoco Oil Co., Mobil and Conoco Inc.

Crude Oil Imports

In 1997, crude oil imports were up 27 percent to 119 800 cubic metres (754,700 barrels) per day compared to 1993, and represented almost 46 percent of total refinery feedstock requirements in Canada. In the summer of 1997, Ontario refiners imported more crude oil than in 1996 because of insufficient pipeline capacity from western Canada. The Atlantic region imported all of its crude oil requirements, while Quebec imported approximately 99 percent, the same as in 1996. Ontario refiners received about 18 percent of their feedstock requirements from foreign sources. Other regions did not import crude oil during 1997.

North Sea crude comprised 49 percent of total imports, compared to 52 percent in 1996. Crude oil originating from OPEC countries represented 39 percent, the same as in 1996. Imports from other sources accounted for 12 percent, up from 10 percent in 1996.

Oil Refining

In 1997, the demand for petroleum products in Canada averaged 247 800 cubic metres (1.6 million barrels) per day, an increase of four percent over 1996. Refinery production rose by three percent to 260 300 cubic metres (1.6 million barrels) per day.

Refinery receipts of domestic crude oil averaged 142 600 cubic metres (0.9 million barrels) per day, a decrease of one percent from 1996.

Main Petroleum Product Exports and Imports

In 1997, exports of main petroleum products and partially processed oil fell by two percent to 41 100 cubic metres (258,900 barrels) per day. This reflects a decrease in shipments of aviation turbine fuel and partially processed oil.

The estimated revenue from main petroleum product exports, including partially processed oil, was \$2.3 billion in 1997, down from \$2.5 billion in 1996. This revenue excludes product exports from crude oil processing agreements for which prices were not assigned.

Figure 6
Light and Heavy Crude Oil Export Prices

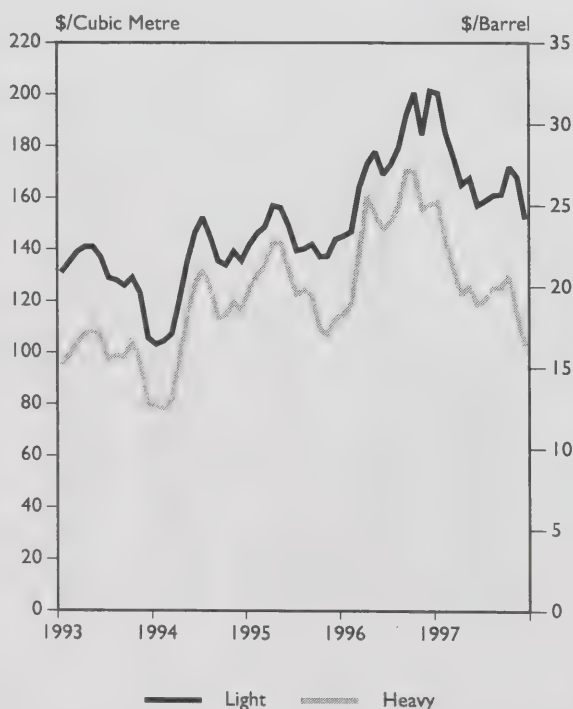
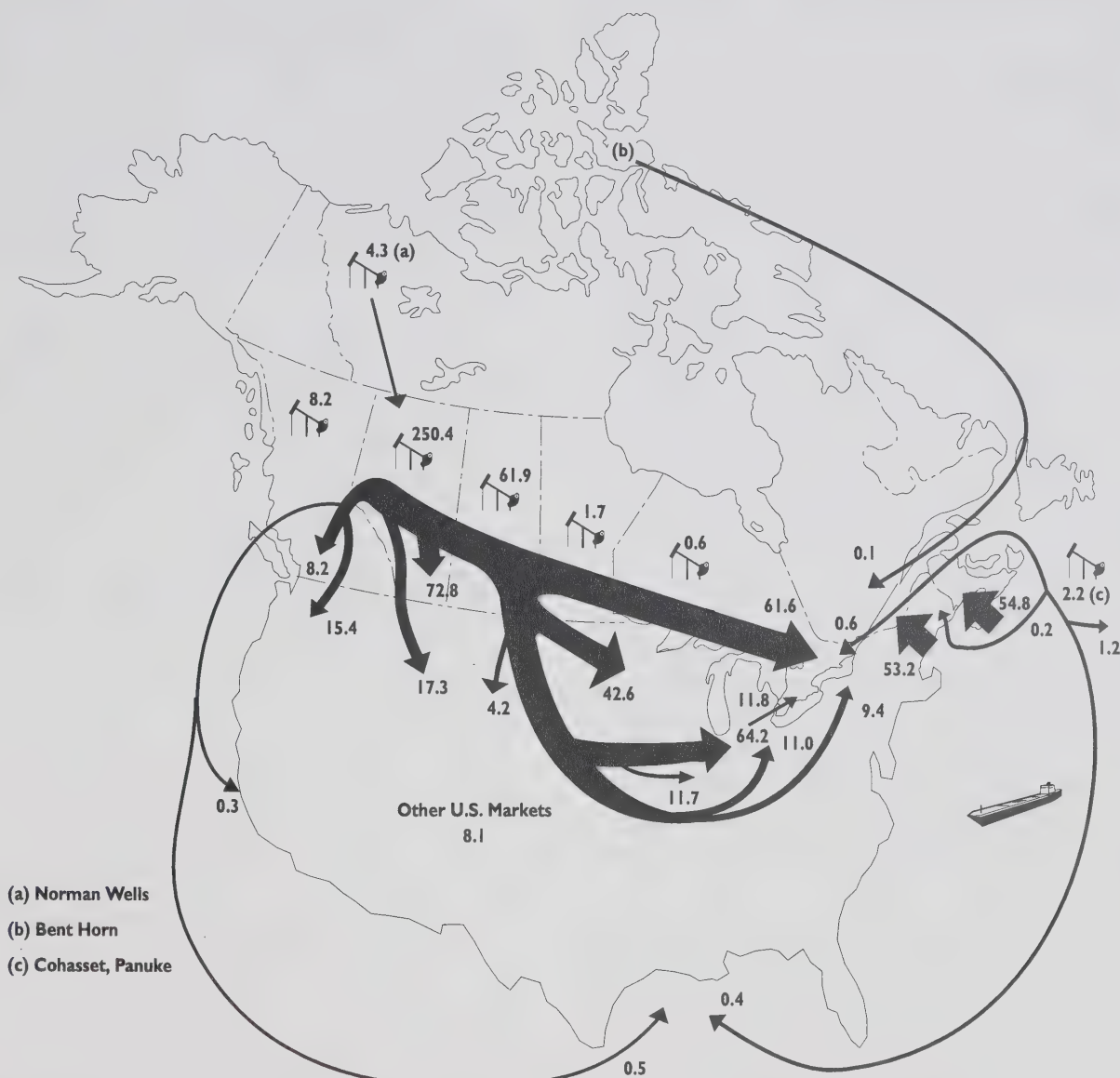


Figure 7
Crude Oil and Equivalent Supply and Disposition 1997
 (thousand cubic metres per day)



Imports of main petroleum products in 1997 averaged 17 500 cubic metres (110,250 barrels) per day, an increase of 38 percent from the previous year. Imports of motor gasoline and middle distillates grew substantially.

The U.S. continued to be the largest buyer of petroleum products, accounting for almost 97 percent of total exports. Exports were also made to the Far East and Europe. The U.S. East Coast was the largest market,

followed by the Midwest. The largest exporters of main petroleum products were by rank: Irving Oil Limited; North Atlantic Refining Ltd.; Ultramar Canada Inc.; Imperial Oil; and Shell Canada Products Limited.

Oil Pipeline Capacity

During 1997, the Edmonton-Sarnia portion of the IPL system operated at capacity. For the last four months of 1997, nominations to ship on IPL's crude oil

lines consistently exceeded capacity, resulting in monthly apportionment (nominations prorated). In early 1997, IPL completed its 19 000 cubic metres (120,000 barrels) per day System Expansion Program ("SEP I").

The Trans Mountain Pipe Line Company Ltd. system operated at or close to capacity during the year, resulting in increased throughput for 1997.

Natural Gas Liquids (excluding Pentanes Plus)

Production of NGLs from gas plants and refineries in 1997 is estimated at 91 500 cubic metres (576,450 barrels) per day. Ethane production was 34 000 cubic metres (214,200 barrels) per day, which was similar to 1996; propane production was 34 500 cubic metres (217,350 barrels) per day, a decrease of two percent; and the production of butanes was 23 000 cubic metres (144,900 barrels) per day, an increase of five percent.

Exports of NGLs during 1997 were 30 600 cubic metres (192,780 barrels) per day, a six percent decrease from 1996. Ethane exports were 3 400 cubic metres (21,420 barrels) per day, propane exports were 19 900 cubic metres (125,370 barrels) per day and butanes exports were 7 400 cubic metres (46,620 barrels) per day. Ethane, propane and butanes exports decreased from 1996 levels by 18, three and six percent, respectively. The decrease is attributed to higher domestic demand and mild temperatures during the fourth quarter.

The U.S. Midwest continued to be Canada's largest market for propane and butanes, accounting for about 70 percent of the total export volume. Smaller amounts were delivered to the U.S. East Coast and West Coast. The largest exporters of propane were, by rank: Amoco Canada Petroleum Company Ltd.; Kinetic Resources (LPG); Canada Imperial Oil Ltd.; and Petro-Canada Hydrocarbons Inc., while the major exporters of butanes were Amoco, Kinetic and Petro-Canada.

The estimated value of NGLs exports in 1997 was \$1.5 billion, compared with \$1.6 billion in 1996. Lower export volumes as well as lower fourth quarter prices were factors that contributed to lower revenues.

NATURAL GAS

Production and Reserves Replacement

Production of natural gas in 1997 remained similar to that in 1996, through drilling to maintain deliverability, by reserves additions and infill development wells. From 1992 to 1997, production increased by 33 percent to 159 billion cubic metres (5.6 trillion cubic feet ("Tcf")). Alberta accounted for 84 percent of production, while British Columbia contributed 12 percent, Saskatchewan contributed four percent, and minor volumes were produced in Ontario and the Territories.

The Board's estimate of remaining established reserves of marketable natural gas as of year-end 1996 (most recent data) is 1 721 billion cubic metres (60.8 Tcf), excluding volumes for the east coast offshore and arctic areas which are not yet producing (Table 6). The volume of remaining reserves declined six percent from 1995. Some reserves were removed due to negative revisions to both unconnected pools and producing pools in Alberta and British Columbia; however, some reserves increased as a result of both new discoveries and positive revisions to reserves estimates in existing pools.

From 1992 to 1996, cumulative additions of marketable gas reserves replaced 67 percent of total production, although 1996 additions were the lowest in recent years (Table 7). Total remaining reserves declined due to the drilling effort directed by industry towards heavy oil production, and due to the effect of development drilling to increase natural gas deliverability rather than exploratory drilling, resulting in lower additions. Limited new discoveries and the substantial downward revision to reserves estimates for existing gas pools resulted in replacing only 50 billion cubic metres (1.8 Tcf), or 32 percent of natural gas production during 1996. Therefore, additions for 1996 dropped considerably from 1995 additions, while production was maintained, resulting in the reduction in remaining reserves and the reserves to production ratio.

During 1997, 5 017 gas wells were completed. This was an increase of 28 percent over 1996, and represents 30 percent of all wells drilled (Figure 4). This number

was only exceeded in 1994. There has been more of an emphasis on exploration prospects for gas drilling than oil drilling; 20 percent of completed gas wells were exploratory whereas only 10 percent of oil wells were exploratory. However, development drilling of gas wells continued to increase in 1997 to maintain deliverability, and may reflect anticipation of increased pipeline export capacity.

A significant event in 1997 was the expansion of industry activity into new natural gas basins. Approximately 85 billion cubic metres (3.0 Tcf) of gas has been identified for development near Sable Island, offshore Nova Scotia, for production to commence in December 1999. In addition, 390 million cubic metres (13.8 billion cubic feet) of gas has been identified for production development at Ikhil in the Mackenzie Delta, which will serve the Inuvik community commencing in the fall of 1999.

Table 6

Estimates of Established Reserves of Marketable Natural Gas at 31 December 1996

(billion cubic metres)

	Initial	Remaining
British Columbia ^(a)	558	243
Alberta ^(b)	3 683	1 378
Saskatchewan ^(c)	179	78
Ontario ^(d)	44	13
NWT and Yukon:	18	9
Total	4 482	1 721

a) Provincial agencies

b) AEBU and NEB common database

c) Provincial estimate for 31 December 1995, NEB updated to 31 December 1996

d) Canadian Association of Petroleum Producers

Table 7

Natural Gas Reserves, Additions and Production

(billion cubic metres)

	1992	1993	1994	1995	1996	Total
Additions	67	107	81	166	50	471
Production	120	131	142	150	158	701
Total Remaining Reserves	1 898	1 874	1 813	1 829	1 721	

Natural Gas Exports and Imports

Natural gas exports to the U.S. increased in 1997 to 82.3 billion cubic metres (2.91 Tcf) from 80.7 billion cubic metres (2.85 Tcf). Export volumes only increased by two percent due to continued limitations of pipeline capacity. Export sales were distributed as follows: 34 percent to the Midwest; 27 percent to California; 22 percent to the Northeast; 16 percent to the Pacific Northwest; and one percent to the Mountain region (Figure 8). In 1997, the Canadian share of the U.S. gas market was 13 percent of consumption, comparable to that in 1996, and represented 52 percent of Canadian production. This percentage has grown steadily from about 35 percent 10 years ago.

Canadian gas exported under short-term orders, which apply for a period of up to two years, continued to increase, and reached 53.5 billion cubic metres (1.89 Tcf) in 1997, up from 48.4 billion cubic metres (1.71 Tcf) in 1996. Sales under short-term orders represented over 65 percent of total export gas sales. The remainder was exported under long-term licences, the majority of which have terms of not more than 10 years. The Northeast region comprises the largest long-term licence market due to the prevalence of non-utility and electric generating plants. Sales under short-term arrangements to domestic markets comprise about two-thirds of total domestic sales.

Natural gas imports were relatively insignificant in relation to Canadian production, totalling 1.41 billion cubic metres (0.05 Tcf) in 1997.

Natural Gas Export Prices

Total gas export revenues increased by about 21 percent to \$9.1 billion from \$7.5 billion in 1996. During 1997, the availability of natural gas on North American markets moved toward a closer balance with demand, raising prices in both Canada and the U.S. Canadian export prices, at the international border, rose by 10 percent to \$2.69 per gigajoule ("GJ") from \$2.44 per GJ in 1996 (Figure 9). The average price of natural gas in the U.S. in 1997 was U.S.\$2.60 per GJ. Export prices into California and the Pacific Northwest increased substantially from 1996 to 1997 due, in part, to low water levels used for electrical generation, which increased demand for gas and resulted in higher prices.

Figure 8
Natural Gas Supply and Disposition 1997
 (billion cubic metres)



Natural Gas Pipeline Capacity

In 1997, 8.1 million cubic metres (287 million cubic feet) per day of additional pipeline capacity was

approved by the Board. The load factor on Canadian pipelines was nearly 100 percent in 1997, indicating that most gas pipelines operated near capacity.

ELECTRICITY

Electricity production increased by nine percent from 1993 to 1997, with the share from nuclear plants declining about 27% since the 1994 peak, while hydroelectric and thermal production has been increasing (Table 8). In 1997, approximately 62 percent of generation was from hydroelectric sources, 24 percent from conventional thermal and 14 percent from nuclear generation. Total Canadian consumption is estimated to have been 520 terawatt hours.

Electricity Exports and Imports

Electricity exports continued their strong performance which began in 1994. This was mainly due to increased demand in U.S. markets and favourable hydraulic conditions in Canada. The total quantity exported was just over 43 terawatt-hours, the third-highest export quantity ever. The associated revenue was the largest ever, almost \$1.4 billion. Although electricity prices have fluctuated since 1993, the average price of firm exports has risen eight percent while the price of interruptible exports has risen ten percent. Five utilities supplied about 95 percent of Canada's electricity exports in 1997. In order of quantities exported, they were: Manitoba Hydro, Hydro Québec, B.C.

Hydro, Ontario Hydro and New Brunswick Power. This was the first time since 1985 that Hydro-Québec was not the largest exporter, although the company still earned the most income. In spite of Ontario's much publicized plans to decommission nuclear plants, its exports increased over the previous year. Two-thirds of these exports occurred in the first six months of 1997. The New England states were the biggest single U.S. importer of electricity, accounting for about one third of purchases, while Minnesota accounted for about 20 percent (Figure 10). With regard to the open access to transmission in the U.S., as yet there has been little measurable effect on the total Canadian exports.

As with natural gas, Canada's electricity imports were small, a little more than seven terawatt hours in 1997. This was, however, a four fold increase over 1996. Almost 90 percent of the imports went to British Columbia and Ontario, with British Columbia taking slightly more than half that amount. Canada's net exports declined by approximately 9% from 1996 to 1997.

Figure 9
Natural Gas Export Prices
(\$Cdn./GJ)

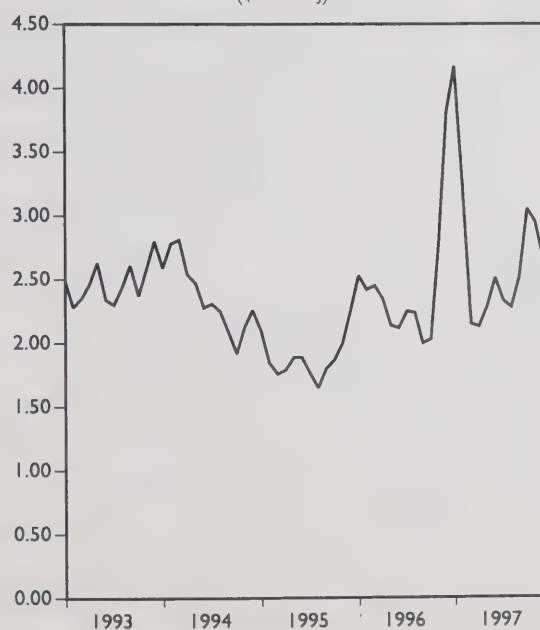


Table 8
Electricity Production^(a)
(Petajoules)

	1993	1994	1995	1996	1997 ^(b)
Hydroelectric	317	329	336	353	345
Nuclear	82	108	92	88	79
Thermal	112	103	114	118	133
Total	511	540	542	559	557

a) Source: Statistics Canada
b) Estimate

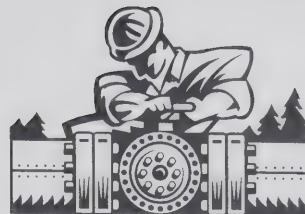
Figure 10
International and Interprovincial Transfers of Electricity
 (gigawatt hours)



a) Data for interprovincial transfers of electricity are from 1 November 1996 to 31 October 1997 and are compiled from Statistics Canada's Electric Power Statistics Monthly.

Data for United States imports and exports are for 1997 (excludes exchanges) and are compiled by the NEB.

Operations



The NEB has regulatory responsibility for the health and safety of the public and workers, and for protection of the environment, when facilities and activities fall under the NEB Act or the COGO Act.

The Board ensures that the risks associated with construction and operation of regulated facilities are properly managed by the facility owner and operator. However, the primary responsibility for safety and the associated protection of the environment rests with the owner of the facilities. The Board achieves the above mentioned objective by:

- developing and maintaining safety and environmental regulations;
- conducting safety inspection and audit programs;
- investigating incidents.

The Board also regulates the technical and operational aspects of exploration and development of petroleum resources in frontier areas that are not subject to federal/provincial accords.

SAFETY AND ENVIRONMENTAL REGULATIONS

The NEB has a number of regulations for the safety of the public and company employees, and the environment. The NEB Act's *Onshore Pipeline Regulations* ("OPR") set out technical, safety and environmental requirements for all stages of a pipeline's life-cycle. The Canadian Standards Association ("CSA") standards provide the technical basis for the OPR. The Board participates with industry and other government agencies in the development and maintenance of these standards. The OPR are in the process of being changed, to reflect a move away from prescriptive regulations to performance-based, goal-oriented regulations. These revisions increase emphasis on pipeline maintenance and require companies to be proactive in managing risks. The revised version of the OPR is expected to be issued in 1998, and will be accompanied by a set of companion guidelines.

The *Pipeline Crossing Regulations*, Parts I and II, require companies to maintain ongoing public aware-

ness programs. The regulations also establish specific responsibilities for pipeline companies and individuals intending to conduct excavation or construction activities near pipelines. In the next three years, these regulations will be revised, updated and harmonized with other legislation.

The Board is represented on several committees with industry and other government agencies pertaining to environmental standards and operating procedures. In 1997, these included the Pipeline Abandonment Committee, the Canadian Pipeline Water Course Crossing Committee, and the Land Use Planning Committee of Major Industrial Accident Council of Canada ("MIACC").

A discussion paper on technical and environmental issues associated with pipeline abandonment was jointly prepared by the NEB, EUB, CAPP and CEPA. A companion paper on related legal issues was also published in 1997.

The Board is also active in developing safety and environmental regulations for COGO Act activities. These regulations are developed jointly with NRCan, the C-NOPB to ensure common regulatory standards in the East Coast offshore and other Frontier areas. In 1997, the NEB prepared draft performance-based *Canada Oil and Gas Diving Regulations*, and companion guidelines.

SAFETY AND ENVIRONMENT INSPECTION AND AUDIT PROGRAM

The Board's designated officers conduct on-site inspections of pipeline systems to ensure compliance with regulatory requirements, and related terms and conditions, in addition to following-up on any complaints received.

The inspection program identifies situations of non-compliance which are brought to the attention of the company. The program utilizes a graduated approach for the resolution of any non-compliance. When a violation cannot be rectified verbally but does not present an immediate or serious hazard, the company is requested

to provide its Assurance of Voluntary Compliance ("AVC"). If an AVC is not received by the inspector, a Board Order compelling the company to rectify the situation is issued. Table 9 itemizes safety and occupational health inspections conducted in 1997 and the number of AVCs issued.

Hazardous situations, or those situations that may result in immediate damage to property or the environment and require immediate and direct action, are identified through the issuance of a Board Order by an inspector. Table 9 itemizes environmental inspections performed in 1997. As a result of the graduated approach, no field emergency Board Orders relating to safety were issued in 1997.

PIPELINE INCIDENTS

Companies must immediately report incidents that result in a fatality, an injury requiring hospitalization, a fire or explosion, an oil spill, a pipeline rupture, or any other failure or malfunction of a pipeline. In 1997, there were 88 incidents reported in accordance with the OPR, up from 69 the previous year, and 70 incidents on average for the years 1992-97. Eleven of these incidents resulted in nine injuries and two fatalities to construction and maintenance personnel. The two fatalities occurred as a result of pipeline construction activities (see Table 10, Pipeline Incidents).

The Board investigates incidents to determine if any trends are evident. The 1997 increase in incidents is

largely related to loose fittings, toxic substance spills, open valves, building fires and small tank overflows at gas plants. Most occurred in controlled areas such as pipeline pump and compressor stations or gas plants. As well, incidents related to "Occupational Safety and Health" and "Outside Forces Damage" have increased marginally.

Incident investigations are an important activity within the Board's pipeline safety program since even minor accidents can provide indications of the condition of a pipeline or areas that require improvement of safety programs. Although the Board investigates all incidents, detailed on-site investigations are usually conducted only for accidents that result in serious injuries or releases of hydrocarbons. In 1997, the Board conducted five major incident investigations (see Table 11, Major Investigations).

When an accident occurs during the operation of a pipeline, it is reported to the NEB and Transportation Safety Board ("TSB"). If the TSB decides to conduct an investigation, the NEB is prohibited from making findings as to the cause and contributing factors of the inci-

Table 10
Pipeline Incidents 1993-1997

	1993	1994	1995	1996	1997
Total Liquids Pipelines	23	23	32	28	30
Total Gas Pipelines	42	45	48	41	58
Total Incidents	65	68	80	69	88

Table 9
Safety, Environmental and Occupational Health Inspections – 1997

	Number of Inspections	AVCs Issued
Construction	17	20
Facility and Plants	90	57
Pipeline Crossings	10	21
Emergency Response	7	0
Environmental	143	1
Total	267	69

Pipeline Safety and Crossing Audits – 1997

	Number of Audits	AVCs Issued
Safety	13	51
Pipeline Crossing	8	9
Total	21	60

Table 11
Major Investigations – 1997

Company	Date	Location	Incident	Status
Trans-Northern Pipelines Inc.	February 10	Metcalfe, Ontario	Broken 2" Nipple	TSB Investigation Ongoing
Interprovincial Pipe Line Inc.	March 14	Strome, Alberta	Check Valve Failure	NEB Investigation Complete
Westcoast Energy Inc.	April 30	Ft. St. John, British Columbia	Monias Pipeline Rupture	TSB Investigation Ongoing
Interprovincial Pipe Line Inc.	September 13	Strome, Alberta	Check Valve Failure	NEB Investigation Complete
TransCanada Pipelines Limited	December 2	Cabri, Saskatchewan	Line 3 Pipeline Rupture and Fire	TSB Investigation Ongoing

dent. The TSB has the authority to issue recommendations and the Board may be required to respond to those recommendations. However, the Board may still investigate to ensure that its regulations were not violated and/or to determine the need for remedial action. In order to avoid duplication of work, the two agencies coordinate their investigations. The TSB and NEB are working toward a "single window" notification system for reportable incidents, which should be in place in 1998.

ACTIVITIES ON FRONTIER LANDS

Board responsibilities in Frontier areas that are not subject to federal/provincial accords are exercised in accordance with the provisions of the COGO Act, certain provisions of the *Canadian Petroleum Resources Act* ("CPR Act") and the NEB Act. In considering frontier applications, the Board establishes requirements for public and worker safety, conservation of the resource, protection of property and the environment, as well as the financial capability of operators to meet any potential liabilities that may arise from the authorized activities (see Table 12 for approvals issued in 1997).

In 1997, the Board approved a Development Plan from the Inuvialuit Petroleum Corporation ("IPC") to develop the Ikhil gas field approximately 50 kilometres northwest of the Town of Inuvik. This is the first development plan approved since 1980. IPC plans to use the one existing well and to drill two additional wells. The

natural gas from the three wells will be carried in above-ground pipelines, approximately three kilometres to a small production facility designed to process 283 000 cubic metres (10 million cubic feet) per day. The production facility will dry and cool the gas so that it can be transported through a buried pipeline parallel to the Mackenzie River for its entire length of approximately 50 kilometres. The gas is intended to meet the needs of the town and the Northwest Territories Power Corporation.

Activity levels have increased substantially in the last few years with the renewal of oil and gas land dispositions. Work bid commitments currently amount to \$92 million. In the immediate future, eight more wells are expected to be drilled in the Fort Liard area, and four exploration wells are expected in the Sahtu region. Imperial Oil Resources Ltd. is expected to continue its infill drilling program at Norman Wells.

NEB inspectors evaluate frontier geological, geophysical, drilling and production operations to ensure regulations governing the occupational health and safety of workers, as well as the protection of the environment and conservation of oil and gas are being respected.

RESEARCH AND DEVELOPMENT

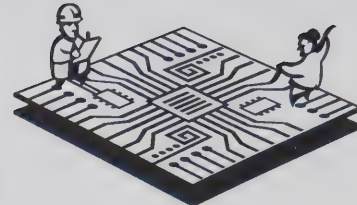
The Board is involved in two research and development programs related to energy. Although the NEB ceased its project management functions on the Panel for Energy Research and Development ("PERD"), it continues to provide advice on program objectives, strategies and priorities. The Environmental Studies Research Fund ("ESRF") finances environmental and social research projects pertaining to the terms and conditions under which petroleum exploration, development, and production activities on Frontier Lands should be conducted. Four final reports for the following projects were published in 1997:

Characterization of Iceberg Pits on the Grand Banks; Beaufort Beluga Tagging Project; Mackenzie Delta Borehole Project; and Beaufort Sea Ice Scour Repetitive Mapping Program. Under the CPR Act, the Board provided secretarial functions for ESRF and served on its management board.

Table 12
Frontier Activity – 1997

	Approvals Issued
Development Plan	1
Drilling Program (Amendment)	1
Authority to Drill Wells	20
Geological & Geophysical Operation Authorizations	13
Authority to Abandon Wells	4
Renewal of Suspended Well Status	5
Drilling Operations	21
Production Facilities & Operations	27
Total	92
Projects Assessed under CEA Act	32
Occupational Safety & Health	27
	Inspections
Operations	27
Production Facilities	6

Information Management



To deliver fair, objective and respected decisions, the Board requires more effective tools to tap increased volumes of information; provide means for users to select the most relevant information; and deliver information more efficiently to Board members, employees and the public. To accomplish this task, the Board is shifting its emphasis to electronic document production and dissemination, while maintaining access to paper documents for those requiring it.

INTERNET WEB SITE

In 1996, the Board launched its Internet Web Site at www.neb.gc.ca. The Internet site provides worldwide electronic access to a wide range of documents and information services. Background on the Board's history, its organizational fabric, its regulatory role and mandate, its hearing process and how the public can participate are but a few of the documents available electronically. The site also provides monthly energy statistics and overviews of the Board's decisions at the time of release. The development and addition of on-line

information to the Board's site is ongoing. (See Figure 11, Web Site Usage).

BOARD DOCUMENT SYSTEM

The Board Document System ("BDS") was created in 1995 to provide direct access to an electronic library of regulatory documents. This system contains Reasons for Decisions on public hearings dating from 1985 to present and hearing transcripts from 1991. The Board is continually adding more recent information to the system. It is expected that in 1998 the BDS will be integrated into the document repository of the Electronic Regulatory Filing System ("ERF") described below.

ELECTRONIC REGULATORY FILING

In concert with the Ontario Energy Board ("OEB") and industry, the Board decided in November 1997 to proceed with implementation of ERF. This decision was taken after a successful Proof of Concept phase, which tested the electronic filing types developed during the previous year. The ERF initiative is aimed at creating a fully-functional, non-proprietary system for the creation, exchange, use and re-use of regulatory information in electronic format. It will greatly enhance the ability of clients to participate in the Board's regulatory process, regardless of their proximity to the Board's office in Calgary.

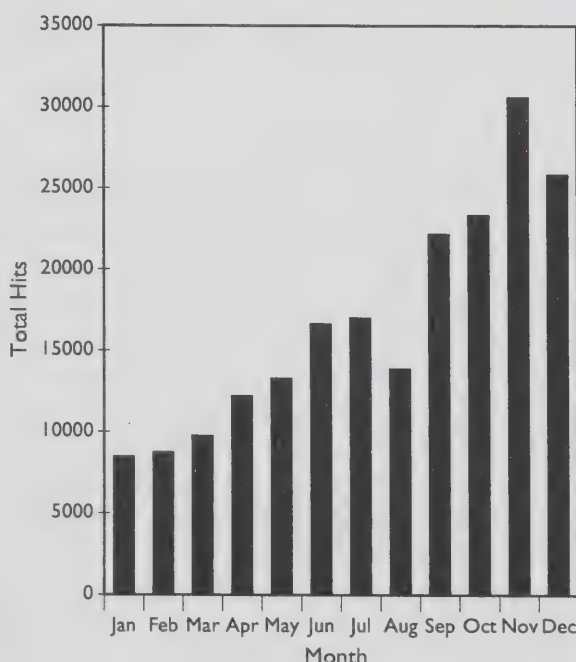
COMMUNICATION INSTRUMENTS

The Board employs a number of communication tools to keep its clients abreast of news and regulatory developments. All are available on the Board's Internet Web Site.

News Releases

Up-to-date information related to ongoing activities such as applications received, public hearings, Board decisions, public consultations and changes to regulations and procedures are made available to the media and public through a news release. As of 1 March 1998, the NEB will encourage all interested parties to access full-text versions of news releases

**Figure 11
1997 Web Site Usage**



through its Web Site. This initiative is part of the Board's attempt to streamline its communications while reducing costs, improving public access to Board information, avoiding duplication and overlap, and preserving resources. For clients who are unable to access electronic news releases, the Board will continue to provide them in paper format.

Regulatory Agenda

As part of its continued commitment to external communications, the Board has been publishing a quarterly *Regulatory Agenda*, which addresses a host of questions pertaining to the status of applications. Commencing in 1998, the Board will be updating this document monthly and encouraging parties to rely on the updated electronic version on the Board's web site.

Bulletins

The Board also publishes information bulletins on the subjects highlighted below:

1. *Pipeline Route Approval Procedures*
2. *The Public Hearing Process*
3. *Non-Hearing Procedures*
4. *How to Participate in a Public Hearing*
5. *The Board's Publications*
6. *The Regulation of Tolls and Tariffs*
7. *The National Energy Board Library*
8. *Electricity*
9. *Protection of the Environment*
10. *Pipeline Tolls and Tariffs: A Compendium of Terms*
11. *The Frontier Information Office*
12. *Pipeline Safety*
13. *Pipeline Regulation: An Overview for Landowners and Tenants*

Other Information Services

Dial-In Sound Access

As a service to regulatory participants who are unable to attend proceedings in Calgary, the Board has been offering dial-in sound access to most of its hearings. In 1997, the Board offered this service for 11 of its 12 major proceedings.

General Enquiries

For more information on any of the Board's services or activities, please contact (403) 292-4800.

Library

The NEB houses a specialized library consisting of reference materials, books and periodicals as well as information not yet available electronically such as hearing applications and submissions, energy studies and speeches by Board Members. The NEB library is open from 9:00 am to 4:00 pm daily.

Any party unable to access the Board's Internet home page and requiring a paper document should contact the Board's Publication Office at (403) 299-3562. Those with an interest in receiving paper material regularly may also ask to be placed on one of the Board's mailing lists.

MAJOR DOCUMENTS PUBLISHED IN 1997

Pipeline Facilities

Federated Pipe Lines (Northern) Ltd. - Oil and Natural Gas Liquids Pipeline - OH-3-96
Reasons for Decision, April 1997

Interprovincial Pipe Line Inc. - Reactivate Line 8 - OH-4-96
Reasons for Decision, April 1997

Novagas Clearinghouse Pipelines Ltd. - Natural Gas Liquids Pipeline - OH-2-96
Reasons for Decision, April 1997

Amoco Canada Petroleum on behalf of Dome Kerrobert Pipeline Ltd. and PanCanadian Kerrobert Pipeline Ltd. - Natural Gas Liquids Pipeline - OH-1-97
Reasons for Decision, July 1997

Sable Offshore Energy Project and Maritimes & Northeast Pipeline Project - GH-6-96
Reasons for Decision, December 1997

TransCanada PipeLines Limited - 1998 Facilities - GH-2-97
Reasons for Decision, December 1997

Interprovincial Pipe Line Inc. - Reversal of Line 9 - OH-2-97
Reasons for Decision, December 1997

Tolls and Tariffs

PanCanadian Petroleum Limited - Request for Service - MH-4-96
Reasons for Decision, February 1997

Westcoast Energy Inc. - 1997 Tolls - RH-2-97

Reasons for Decision, August 1997

TransCanada PipeLines Limited - 1997 Tolls - RH-1-97

Reasons for Decision, September 1997

Novagas Canada Ltd. - Westcoast Energy Inc. -

Gas Stripping Arrangements at Taylor, British Columbia - MH-2-97

Reasons for Decision, October 1997

Gas Exports

Various Gas Exports - GHW-2-96

Reasons for Decision, March 1997

Various Gas Exports - GHW-1-97

Reasons for Decision, September 1997

Electricity Facilities

TransCanada Power Corp. - Facilities - EH-1-96

Reasons for Decision, January 1997

Electricity Exports

Inland Pacific Energy Services

Letter Decision, 6 March 1997

Montwegan International Energia Resource Inc.

Letter Decision, 8 May 1997

James Maclaren Industries Inc.

Letter Decision, 16 July 1997

Aquila Canada Corporation

Letter Decision, 3 December 1997

Reports

Intervenor Funding Options Report - Responses by Participants, December 1996

Natural Gas Market Assessment - Long-term Canadian Natural Gas Contracts: an Update, January 1997

Unconnected Gas Supply Study - Phase II - Evaluation of Unconnected Reserves in British Columbia, June 1997

Natural Gas Market Assessment - Producers' Response to Changing Market Conditions - 1992-1996, June 1997

Presentation on the Findings of the SCC Inquiry - Staff Notes on Community Meetings, July 1997

Awareness '97 Workshop - Notes of the first Public Awareness Workshop in Canada dedicated to interprovincial pipelines

Regulatory

Memorandum of Guidance (MOG) - Full Implementation of the September 1988 Canadian Electricity Policy, 2 April 1997

Sable Island Gas Projects - The Joint Public Review Panel Report, October 1997

Memorandum of Guidance - Fair Market Access Procedure for the Licensing of Long-term Exports of Crude Oil and Equivalent, 17 December 1997

Information

Regulatory Agenda - January, April, July and October

National Energy Board - 1996 Annual Report, April 1997

National Energy Board - Annual Report Pursuant to the Access to Information Act and Privacy Act, 1 April 1996 - 31 March 1997

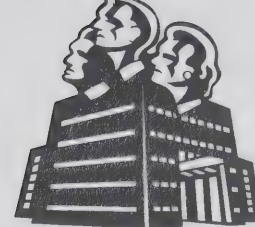
Information Bulletin XII - Pipeline Safety - January 1997

Information Bulletin XIII - Pipeline Regulation: An Overview for Landowners and Tenants - January 1997

Information Bulletin VI, The Regulation of Tolls and Tariffs (Revised) - June 1997

Pipelines - A Guide for Landowners and Tenants (Pamphlet) - February 1997

Corporate Services



STRUCTURAL REORGANIZATION

The Board has reorganized into five major lines of business: Applications, Commodities, Operations, Information Management and Corporate Services. The reorganization has enhanced the NEB's ability to be a results-focused, team-based workplace capable of responding to the changing regulatory environment. While the multi-disciplinary, team-based structure for the new organization was finalized in March 1997, the placement and confirmation of employees in various positions continued throughout the year.

CULTURAL TRANSFORMATION

The reorganization was a prerequisite to transforming the NEB into a workplace where individuals on participative decision-making teams focus on work processes and results. In 1997, the Board invested resources in providing employees with the skills to maximize the potential of such an organization and in developing systems to clarify roles and accountabilities. The Board has also started to streamline corporate programs and processes to attain optimum efficiency and effectiveness. For example, a program is in place to assist Business and Team Leaders to develop cohesive, purposeful leadership teams that understand their role and accountability in leading the organization; a study has been initiated to design an employee classification system which supports overall Board strategies; and work has begun on designing and implementing an employee performance management process to better enable objective setting and performance review.

PROFESSIONAL LEADERSHIP PROGRAM

Any transition to a multi-disciplinary structure must address the fact that expertise is often dispersed throughout the organization. Recognizing this need, the Board developed and launched the Professional Leadership Program, which was defined through an extensive employee participation process. The main objective of

the program is to maintain and enhance the Board's technical capabilities.

COMPENSATION STRATEGY

Like most Calgary organizations in the energy sector, the Board has been challenged in attracting and retaining staff in the prevailing economic climate. Its goal is to be an employer of choice in the Calgary labour market by offering a reasonable compensation package and an outstanding work environment. It believes this goal can be achieved through a team-based structure, a commitment to trust, honesty and mutual respect, a participative decision-making model, flexible work arrangements and an emphasis on employee development.

FINANCIAL SPENDING

Since 1991, the Board has been operating under a Cost Recovery Plan, through which 85 percent of its costs have been recovered from the regulated community rather than the taxpayer. Cost recovery is based on staff time spent on the regulation of each commodity, the volume of throughput of natural gas, crude oils and liquids on Board-regulated pipelines, and on the quantities of electricity exported. NEB staff met with representatives of the Cost Recovery Community three times during 1997. The purpose of these meetings was to ensure a high level of communication with those companies that pay for NEB Services. As requested by the Treasury Board, the Cost Recovery Committee has initiated discussions on a dispute resolution mechanism.

Table 13 shows the Board's expenditure and staff levels for the last five fiscal years. The estimated expenditure level in 1997/98 is slightly higher than the preceeding three years due to heavy workload (see Figure 1). Additional information on budgets and plans can be found in the NEB 1997-98 *Estimates* and the 1998 *Report on Plans and Priorities*, both of which are available upon request.

Table 13
Historical Expenditures and Staffing

Fiscal Year (April 1 - March 31)	Expenditures (\$000)	Full-time Equivalents
1993 - 1994	28,439	335
1994 - 1995	27,377	298
1995 - 1996	25,911	279
1996 - 1997	26,800	272
1997 - 1998 ^{a)}	27,700	277

a) Estimate

Rewards and Recognition

To recognize employee commitment, the Board has adopted a formal program of Rewards and Recognition centering on "Team Celebrations" and "Long Service Awards". The Board also proudly acknowledges employee participation in the Calgary community. In addition to their active involvement in the United Way campaign, employees participated in the annual Christmas Adopt-A-Family program, the NEB Cookie Campaign for the Tom Baker Cancer Center, and the drive for used winter clothing and blankets for the homeless and needy.

Supplement I

The Board's Mandate

The National Energy Board is an independent regulatory tribunal established in 1959. It reports to Parliament through the Minister of Natural Resources Canada ("the Minister"). At the end of 1997, it had five permanent members, out of a possible total of nine, and four temporary members. The Board is a court of record. With regard to attendance at hearings, the swearing and examining of witnesses, production and inspection of documents and the enforcement of its orders, it has the powers of a superior court.

The Board's regulatory powers include the granting of authorizations for: the construction and operation of interprovincial and international oil, gas and commodity pipelines; construction and operation of international and designated interprovincial power lines; the setting of tolls and tariffs for oil and gas pipelines under its jurisdiction; the export of oil, natural gas and electricity and the import of natural gas.

The Board also has regulatory powers under the *Canada Oil and Gas Operations Act* ("COGO Act") and certain provisions of the *Canada Petroleum Resources Act* for oil and gas exploration and activities on frontier lands not otherwise regulated under joint federal/provincial accords.

The Board's mandate includes providing expert technical advice to the Canada-Newfoundland and the Canada-Nova Scotia Offshore Petroleum Boards, Natural Resources Canada and Indian and Northern Affairs Canada.

Under the *Canadian Environmental Assessment Act*, the Board is responsible for conducting environmental assessments of the planning, construction, operation, maintenance and abandonment of energy projects within its jurisdiction. Under the *National Energy Board Act* and the COGO Act, the Board's environmental activities have evolved into three distinct phases: evaluating the potential environmental effects of proposed projects; monitoring and enforcement of terms and conditions attached to project approval; and

the ongoing, long-term monitoring of operations.

The Board is responsible for ensuring the safe operations of the pipelines under its jurisdiction and the Board's inspectors are appointed Safety Officers for the administration of Part II of the *Canada Labour Code*.

The Board provides advice to the Minister on matters relating to its regulatory expertise upon the Minister's request. The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*.

Below is a listing of Acts, Regulations, Rules and Guidelines under which the Board operates or has responsibilities.

ACTS, REGULATIONS, RULES AND GUIDELINES

Acts

- National Energy Board Act
- Canada Oil and Gas Operations Act
- Canada Petroleum Resources Act
- Canadian Environmental Assessment Act
- Canada Labour Code Part II
- Energy Administration Act
- Northern Pipeline Act

Regulations Pursuant to the National Energy Board Act

- Cost Recovery Regulations
- Export and Import Reporting Regulations
- Gas Pipeline Uniform Accounting Regulations
- Oil Product Designation Regulations
- Oil Pipeline Uniform Accounting Regulations
- Onshore Pipeline Regulations
- Offshore Pipeline Regulations
- Part VI (Oil and Gas) Regulations
- Part VI Regulations, Electricity
- Pipeline Crossing Regulations, Part I
- Pipeline Crossing Regulations, Part II
- Power Line Crossing Regulations

Substituted Service Regulations
Toll Information Regulations

Regulations Pursuant to the Canada Oil and Gas Operations Act

Canada Oil and Gas Certificate of Fitness Regulations
Canada Oil and Gas Diving Regulations
Canada Oil and Gas Drilling Regulations
Canada Oil and Gas Installations Regulations
Canada Oil and Gas Geophysical Regulations
Canada Oil and Gas Production and Conservation Regulations
Canada Oil and Gas Operation Regulations
Oil and Gas Spills and Debris Liability Regulations

Regulations Pursuant to the Canadian Environmental Assessment Act

Law List Regulations
Inclusion List Regulations
Comprehensive Study List Regulations
Exclusion List Regulations
Federal Authorities Regulations
Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements

Rules

Rules of Practice and Procedure

Guidelines

Guidelines for Filing Requirements (22 February 1995). The Guidelines set out the information to be provided by applicants for:

- Early public notification of projects
- Certificates for gas pipelines exceeding 40 kilometres
- Certificates for oil pipelines exceeding 40 kilometres
- Section 58 orders for gas pipelines under 40 kilometres or additions and upgrades to existing facilities

- Section 58 orders for oil pipelines under 40 kilometres or additions and upgrades to existing facilities
- Environmental, socio-economic and lands information for authorization to construct, operate and abandon pipelines
- Notices required when dealing with determination of detailed route and approval
- Leave to open orders for pipelines
- Orders fixing tolls and tariffs
- Quarterly surveillance reports to be filed by Group 1 companies
- Orders for export and import of gas.

Guidelines for Negotiated Settlements of Traffic, Tolls and Tariffs (23 August 1994)

Guidelines Respecting Physical Environmental Programs During Petroleum Drilling and Production Activities on Frontier Lands (April 1994)

Financial Regulatory Audit Policy of the National Energy Board (1 December 1994)

Memorandum of Guidance - Regulation of Group 2 Companies (6 December 1995)

Memorandum of Guidance - Retention of Accounting Records by Group 1 Companies Pursuant to Gas/Oil Uniform Accounting Regulations (30 November 1994)

Memorandum of Guidance to Interested Parties Concerning Full Implementation of the September 1988 Canadian Electricity Policy (2 April 1997)

Offshore Waste Treatment Guidelines (September 1996)

Oil and Gas Occupational Safety and Health Guidance Notes (April 1992)

Section 58 Streamlining Initiative - Order XG/XO-100-94

Memorandum of Guidance - Fair Market Access Procedure for the Licensing of Long-term Exports of Crude Oil and Equivalent (17 December 1997)

Supplement II

Legal Proceedings

Section 22 of the NEB Act allows for appeals to the Federal Court of Appeal (FCA) with leave of that court from any decision or order of the Board on questions of law or jurisdiction. The Board may, in accordance with the Rules of Practice and Procedure, 1995, refer to the

FCA a question or issue of law, of jurisdiction, or of practice or procedure that arises during any proceeding. Listed below are NEB-related legal proceedings heard by the FCA in 1997.

Applicants	Applications	Decisions
National Energy Board (Referral dated 12 January 1996)	Reference to the FCA regarding a jurisdictional question over certain upstream and downstream facilities connecting to Novagas Clearinghouse Pipeline Ltd.'s Pesh Creek Pipeline (GH-1-96).	On 13 January, the FCA quashed the referral.
Attorney General of the Province of Alberta (Application dated 11 July 1996)	Application to the FCA for an order quashing the Board's reference to the FCA regarding the jurisdictional question with respect to the Pesh Creek Pipeline (GH-1-96).	On 13 January, the FCA quashed the Board's referral.
Richard Leroux and 417 Auto Wreckers Limited (Application dated 22 January 1996)	Application to the FCA for leave to appeal and for an order for judicial review of the Board's decision of 22 December 1995 in which it decided that the applicant had not sufficiently demonstrated that the operations and aggregate fell within the definition of mines and minerals in section 81 of the NEB Act. On 6 May, the FCA quashed the application for judicial review. On 29 March 1996, the Court granted the application for leave to appeal but only on a question of law concerning the Board's interpretation of section 81 of the NEB Act.	The appeal remained outstanding at the end of 1997 and will be heard on 28 May 1998.
BC Gas Utility Ltd. (Application dated 3 April 1996)	Application to the Supreme Court of Canada for leave to appeal the FCA's decision of 9 February 1996 in which it decided that Westcoast Energy Inc.'s Grizzly Valley and Fort St. John's expansion projects were under the Board's jurisdiction (GH-4-94 and GH-6-94). The application for leave to appeal was granted and an appeal was entered.	The Supreme Court heard the appeal on 12 November. The Court reserved its judgment. The appeal remained outstanding at the end of 1997.
Canadian Hunter Exploration Ltd. (Application dated 22 August 1996)	Application to the FCA for leave to appeal the Board's decision of 25 July 1995 in which it decided, as a result of the approval of Tidal Resources Inc.'s application to construct a pipeline, that it had jurisdiction over certain upstream gathering facilities owned by Canadian Hunter.	On 7 November 1996, the FCA granted leave to appeal. This appeal remained outstanding at the end of 1997.
Morgan Hydrocarbons Inc. (Application dated 3 September 1996)	Application to the FCA for leave to appeal the Board's decision of July 1996 to approve the abandonment of a portion of Manito Pipelines Ltd.'s pipeline. An application to stay the Board's order was also filed with the Court (MH-1-96).	On 1 May, 1997 the Applicant discontinued the application.
British Columbia Wilderness Federation (Application dated 11 October 1996)	Application to the FCA for leave to appeal the Board's decision of 13 September in which it authorized British Columbia Power Exchange Corporation to export electricity to Intalco Aluminum Corporation.	On 3 January, 1997 the FCA dismissed the application for leave to appeal.
Rocky Mountain Ecosystem Coalition (RMEC) (Application dated 29 October 1996)	Application to the Supreme Court of Canada for leave to appeal the FCA's decision of 24 July 1996 dismissing RMEC's application for judicial review of the Express Pipeline Joint Review Panel's Report regarding the Express Pipeline Project (OH-1-95).	On 20 March, 1997 the Supreme Court dismissed the application for leave to appeal.

Applicants

(a) Gaz Métropolitain and Company,
Limited Partnership and
Consumers Gas Energy Inc.

(b) Tatham Offshore Inc.
(Applications dated 25 November
and 2 December 1997)

The Industrial Cape Breton
community Alliance Group
(Application dated 22 November)

Foothills Pipe Lines Ltd.
(Applications dated 4 December)

Applications

Applications to the Federal Court (Trial Division and Court of Appeal) for
judicial review of the Sable Joint Review Panel's Report regarding the
Sable Pipeline Project dated 27 October 1997.

Applications for leave to appeal an interlocutory decision of the
Board dated 27 October 1997.

Application for leave to appeal the Board's decision of 3 December 1997
to approve the Sable project.

Application to the Federal Court (Trial Division and Court of Appeal) for
judicial review of the Sable Joint Review Panel's Report regarding the
Sable Pipeline Project and the Report of the Commissioner of the
Canada-Nova Scotia Offshore Petroleum Board.

Applications to the FCA for judicial review and for leave to appeal an
interlocutory decision of the Board dated 25 November 1997.

Decisions

On 9 December 1997 the Federal Court of
Appeal dismissed the applications for leave
to appeal. On 17 December 1997 GMI et al
discontinued its application for judicial
review filed in the Trial Division. An
application for judicial review filed by
Tatham Offshore Inc. remained outstanding
at the end of 1997.

This application remained outstanding at the
end of 1997.

These applications were discontinued on
12 December 1997.

Supplement III

Companies under NEB Jurisdiction

The following is a list of the pipeline companies and electric power entities which fall under the Board's jurisdiction. The pipeline companies have been divided into two groups. Group 1 consists of the 11 major pipeline companies which are audited by the Board on a regular basis and whose operating results are continuously monitored by the Board. The 72 companies under the Board's jurisdiction that are not included in Group 1 have been designated as Group 2 companies.

Group 1 Gas

- Alberta Natural Gas Company Ltd.
- Foothills Pipe Lines Ltd.
- TransCanada PipeLines Limited
- Trans Québec & Maritimes Pipeline Inc.
- Westcoast Energy Inc.
- Maritimes and Northeast Pipeline Management Ltd.

Group 1 Oil and Products

- Cochin Pipe Lines Ltd.
- Interprovincial Pipe Line Inc.
- Interprovincial Pipe Line (NW) Ltd.
- Trans Mountain Pipe Line Company Ltd.
- Trans-Northern Pipelines Inc.

Group 2 Gas

- Bellator Exploration Inc.
- Blue Range Resource Corporation
- Canadian Hunter Exploration Ltd.
- Canadian-Montana Pipe Line Company
- Canadian Natural Resources Ltd.
- Canor Energy Ltd.
- Centra Transmission Holdings Inc.
- Champion Pipe Line Corporation Limited
- Chauvco Resources Ltd.
- Chief Mountain Gas Co-op Ltd.
- Consumers' Gas (Canada) Limited
- Cube Energy Corp.
- ELAN Energy Inc.
- Fletcher Challenge Energy Canada Inc.

- Huntingdon International Pipeline Corporation
- Husky Oil Operations Ltd.
- Interenergy Sheffield Processing Company (Canada) Ltd.

- Many Islands Pipe Lines (Canada) Limited
- Mid-Continent Pipelines Limited
- Minell Pipeline Ltd.
- Mobil Oil Canada, Ltd.
- Murphy Oil Company Ltd.
- Niagara Gas Transmission Limited
- Novagas Clearinghouse Pipelines Ltd.
- Peace River Transmission Company Limited
- Penn West Petroleum Ltd.
- Petrorep Resources Ltd.
- Poco Petroleums Ltd.
- Portal Municipal Gas Company Canada Inc.
- Quest Oil and Gas Ltd
- Remington Energy Ltd.
- Renaissance Energy Ltd.
- Revenue Canada Customs and Excise
- Rigel Oil and Gas Ltd.
- SCL Quebec Pipeline Inc.
- St. Clair Pipelines Ltd.
- Stampeder Exploration Ltd.
- Talisman Energy Inc.
- Tidal Resources Inc.
- Union Gas Limited
- Wascana Energy Inc.
- 177293 Canada Ltd.

Group 2 Oil and Products

- Aurora Pipe Line Company
- Dome Kerrobert Pipeline Ltd. and PanCanadian Kerrobert Pipeline Ltd.
- Dome NGL Pipeline Ltd.
- Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd.
- Ethane Shippers Joint Venture
- Express Pipeline Ltd.

Federated Pipe Lines (Northern) Ltd.
 Genesis Pipeline Canada Ltd.
 Imperial Oil Resources Limited
 ISH Energy Ltd.
 Joint Ventures of the Bi-Provincial Upgrader
 Manito Pipelines Ltd.
 Montreal Pipe Line Limited
 Northwest Transmission Company Limited
 Novacor Chemicals (Canada) Ltd.
 Petroleum Transmission Company
 PrimeWest Energy Inc.
 Pouce Coupé Pipe Line Ltd.
 Rigel Oil and Gas Ltd.
 SCL Pipeline Inc.
 Sun-Canadian Pipe Line Company Limited
 Wascana Pipe Line Ltd.
 Westspur Pipe Line Company Inc.
 Yukon Pipelines Limited

Commodity Pipelines

E. B. Eddy Forest Products Ltd.
 Fraser Inc.
 Genesis Pipeline Canada Ltd.
 Penn West Petroleum Ltd.
 Stone Consolidated Corporation

Electric Power Utilities and Others

Alberta Power Limited and CU International
 Limited
 Aquila Canada Corp.
 British Columbia Hydro and Power Authority and
 British Columbia Power Exchange Corporation
 Canadian Niagara Power Company
 Canadian Sandpoint Power Association

The Canadian Transit Company
 Cedars Rapids Transmission Company Limited
 Chandler Energy Inc.
 Cominco Ltd.
 Destec Power Services Inc.
 Detroit and Canada Tunnel Corporation
 Edmonton Power Authority
 Engage Energy Canada, L.P.
 Enron Capital and Trade Resources Canada
 Corporation
 Farms (including cottages and isolated loads)
 Fraser Inc.
 Hydro-Québec
 Inland Pacific Energy Services Ltd.
 Lac La Croix Power Authority
 Maine and New Brunswick Power
 James Maclaren Inc.
 Manitoba Hydro-Electric Board
 Montwegan International Resource Inc.
 James R. McMurrich
 New Brunswick Electric Power Commission
 Ontario Hydro
 Roseau Electric Cooperative Inc.
 Saskatchewan Power Corporation
 Sonat Power Marketing Inc. and Sonat Power
 Marketing L.P.
 St. Clair Tunnel Corp.
 Stone-Consolidated Corporation
 Tractebel Energy Marketing Inc.
 TransAlta Enterprises Corporation
 TransCanada Power Corp.
 Utility-Trade Corp.
 West Kootenay Power Ltd.

Supplement IV

Cooperation with Other Agencies

The Board cooperates with other agencies, wherever practical, to reduce regulatory overlap and provide more efficient regulatory services. In addition, the Board provides assistance to other countries who seek to benefit from the Board's long experience and success as a leading regulatory agency.

COOPERATION WITH OTHER GOVERNMENT AND REGULATORY AGENCIES

Northern Pipeline Agency ("NPA")

The Board provides technical and administrative assistance to the NPA, which, pursuant to the *Northern Pipeline Act*, has primary responsibility for overseeing the planning and construction of the Canadian portion of the proposed Alaska Natural Gas Transportation System by Foothills Pipe Lines Ltd. Mr. Kenneth Vollman, Acting Chairman, serves as Administrator and Designated Officer of the Agency.

Transportation Safety Board of Canada ("TSB")

While the National Energy Board has exclusive responsibility for regulating the safety of oil and gas pipelines under federal jurisdiction, it shares the responsibility for investigating pipeline incidents with the TSB. The roles and responsibilities of each body with regard to pipeline accident investigations are outlined in a Memorandum of Understanding ("MOU") between the two boards.

Human Resources Development Canada ("HRDC")

The Board has a MOU with HRDC to coordinate safety functions under the COGO Act and the NEB Act. This MOU applies to all Board-regulated pipelines and associated facilities.

Natural Resources Canada ("NRCan")

The Board has a MOU with NRCan to reduce duplication and increase cooperation between the agencies. This MOU covers items such as data collection and development, the enhancement of energy models and special studies.

Yukon Territory Department of Economic Development ("DED")

The Board continues to work with Yukon officials to facilitate the transfer of oil and gas regulatory responsibilities in accordance with the Yukon Accord Implementation Agreement. The Board provides expert technical advice to the DED.

Alberta Energy and Utilities Board ("EUB")

The Board has a MOU with the EUB on Pipeline Incident Response. The agreement provides for mutual assistance and a faster and more effective response by both boards to pipeline incidents in Alberta.

During 1997, the Board continued its involvement in a Pipeline Task Force with the EUB. The purpose of this task force is to develop consistent and compatible regulatory requirements. It is expected that this process will result in more efficient use of organizational resources, leading to a reduced regulatory burden on both the pipeline industry and the public.

The Board and the EUB have developed a common reserves database for oil and gas reserves in Alberta. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for cooperation.

British Columbia Ministry of Employment and Investment ("MEI")

In December, the Board and the MEI signed a Reserves Database Agreement to develop a common reserves database for oil and gas reserves in British

Columbia. Both agencies are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for cooperation.

Ontario Energy Board ("OEB")

The Board is pursuing its Electronic Regulatory Filing ("ERF") initiative as a joint venture with the OEB and twenty other key participants in the regulatory arena. The ERF project will result in a fully functional electronic system for the creation, exchange, use and reuse of regulatory information. Cooperation with the OEB will ensure its applicability in both jurisdictions.

Saskatchewan Department of Energy and Mines ("DEM")

Preliminary discussions have been held with regard to establishing a common reserves database.

Nova Scotia and Newfoundland

The Board has an MOU with Natural Resources Canada by which the Board provides advice and assis-

tance to NRCan and the provinces of Newfoundland and Nova Scotia in drafting federal and provincial versions of regulations which pertain to the offshore areas under joint resource management accords.

Cooperation with Other Countries

During 1997, the Board cooperated with several foreign countries by providing information on the Board's regulatory role and other energy-related matters. Consultations took place with representatives of the U.S. Federal Energy Regulatory Commission and the Comisión Reguladora de Energía of Mexico, as well as with visiting officials from Bolivia, China, Russia, the Ukraine and Venezuela.

The Board also participated on the Energy Working Group within the Asia Pacific Economic Cooperation Initiative, comprised of 18 member countries on the Pacific Rim dedicated to improving economic ties.

Supplement V

List of Appendices

The following Statistical Reports have been published separately as Appendices to the Annual Report. Electronic copies can be found on the Board's Web Site and print versions are available from our Publications Office.

Appendix A

- A1 Crude Oil and Equivalent Supply and Disposition
- A2 Estimated Established Reserves of Crude Oil and Bitumen - December 1996
- A3 Natural Gas Supply and Disposition
- A4 Estimated Established Reserves of Marketable Natural Gas - December 1996
- A5 Natural Gas Liquids Supply and Disposition
- A6 Geophysical Activity
- A7 Exploration and Development Expenditures
- A8 1997 Sales of Exploration Rights in Western Canada
- A9 1997 Sales of Exploration Rights in Frontier Regions
- A10 Electricity Generation and Disposition

Appendix B

- B1 Certificates Issued During 1997 Approving the Construction of New Oil Pipeline Facilities Exceeding 40 Kilometres in Length
- B2 Orders Issued During 1997 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length
- B3 Exports of Canadian Crude Oil and Equivalent - 1996 and 1997
- B4 Exports of Canadian Crude Oil and Equivalent - 1993-97
- B5 Exports of Petroleum Products by Month - 1997
- B6 Exports of Petroleum Products by Company - 1996 and 1997

Appendix C

- C1 Certificates Issued During 1997 Approving the Construction of New Gas Pipelines Exceeding 40 Kilometres in Length
- C2 Orders Issued During 1997 Approving Gas Pipeline Construction Not Exceeding 40 Kilometres in Length
- C3 Licences and Long-Term Orders to Export Natural Gas as at 31 December 1997
- C4 Licences and Long-Term Orders to Import Natural Gas as at 31 December 1997
- C5 Natural Gas Exports by Export Point, 1993-97
- C6 Total Net Exports of Propanes and Butanes, 1996-97

Appendix D

- D1 Certificates and Permits Issued During 1997 for International Power Lines
- D2 Amending Orders Issued During 1997 for International Power Lines
- D3 Licences Issued During 1997 for the Export of Electricity
- D4 Permits and Orders Issued During 1997 for the Export of Electricity
- D5 Electricity Exports 1997
- D6 Electricity Trade between Canada and the United States (by Province)
- D7 Electricity Trade between Canada and the United States (by American Region/State)

Appendix E

- E1 Financial Information - Group 1 Oil Pipeline Companies with Multi-year Incentive Toll Agreements
- E2 Financial Information - Group 1 Oil Pipelines with Tolls based on Cost of Service
- E3 Financial Information - Group 1 Gas Pipeline Companies

Supplement VI

Metric Conversion Table

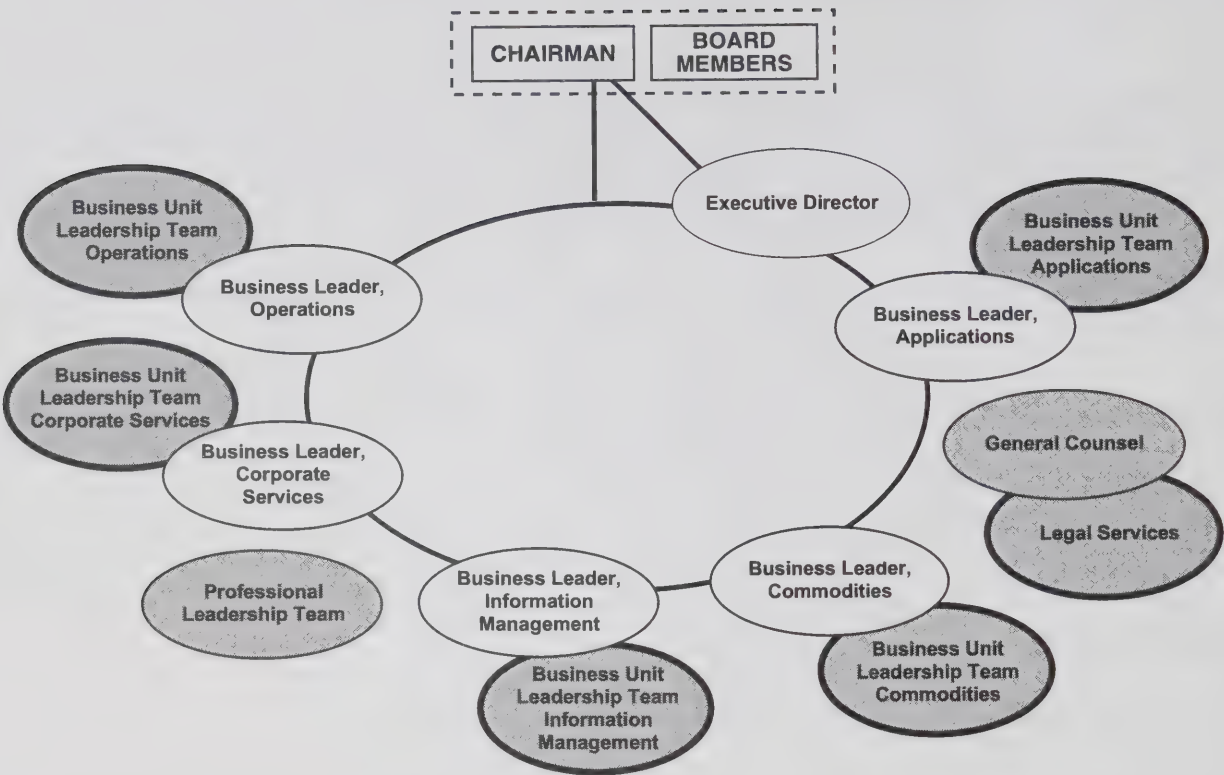
The National Energy Board uses the International System of Units. The energy units most commonly referred to in this report are the gigajoule and the petajoule. Combustion of a 30-litre gasoline tank expends approximately one gigajoule of energy. A petajoule is one million gigajoules. On average, Canada consumes about one petajoule of energy for all uses (heat, light and transportation) every 50 minutes.

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

APPROXIMATE CONVERSION FACTOR

metre	=	3.28	feet
kilometre	=	0.62	mile
cubic metre of oil	=	6.3	barrels
cubic metre of natural gas	=	35.3	cubic feet
gigajoule	=	0.95	thousand cubic feet of natural gas at 1000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
gigajoule	=	10^9	joules
hectare	=	2.4^7	acres
petajoule	=	10^{15}	joules
gigawatt hour	=	10^6	kilowatt hour
terawatt hour	=	10^9	kilowatt hour

Organization



SENIOR BOARD STAFF

Gaétan Caron	Executive Director	Michel Mantha	Secretary of the Board
Judith Hanebury	General Counsel	Glenn Booth	Professional Leader, Economics
Brenda Kenny	Business Leader, Applications	Ken Sato	Professional Leader, Environment
Terrance Rochefort	Business Leader, Commodities	Vacant	Professional Leader, Energy Resources
John McCarthy	Business Leader, Operations	Vacant	Professional Leader, Engineering
Scott Richardson	Business Leader, Information Management		
Sylvia Farrant	Business Leader, Corporate Services		

Business Unit Responsibilities

Applications

The Applications Business Unit is responsible for the processing and assessment of regulatory applications submitted under the NEB Act. These fall primarily under Parts III, IV and VI of the Act corresponding to facilities, tolls and export applications. The Applications Unit is also responsible for the financial surveillance and financial audits of NEB-regulated pipelines.

Commodities

The Commodities Business Unit is responsible for assisting the Board in fulfilling its mandate through energy industry and marketplace surveillance, the updating of guidelines, and regulations relating to energy exports as prescribed by Part VI of the NEB Act. In the context of evolving market conditions, it is also responsible for the disposition of applications for short-term exports of gas, oil and NGLs, imports of natural gas, and the disposition of applications concerning electricity exports and international power lines.

Operations

The Operations Business Unit is accountable for safety and environmental matters pertaining to facilities under the NEB Act, the COGO Act and the CPR Act. It conducts safety and environmental inspections and audits, accident investigations, monitors emergency response procedures, regulates the development of hydrocarbon resources in non-accord Frontier Lands, and develops regulations and guidelines with respect to the above.

Information Management

The Information Management Business Unit is responsible for developing and implementing an information management strategy for the Board that enhances its ability to deliver fair, objective and respected decisions and provides the information required by external stakeholders.

Corporate Services

The Corporate Services Business Unit is responsible for providing those services necessary to assist the Board in its management of human, material and financial resources.

BOARD MEMBERS

Roland Priddle ^(a)	Chairman
Kenneth W. Vollman ^(b)	Vice-Chairman
Anita Côté -Verhaaf	Member
Roy Illing ^(c)	Member
Robert Andrew, Q.C. ^(d)	Member
Judith Snider	Member
Diana Valiela ^(e)	Member
Rowland J. Harrison ^(f)	Member
Robert Fournier ^(g)	Temporary Member
Richard D. Revel ^(h)	Temporary Member
Gaétan Caron ⁽ⁱ⁾	Temporary Member
Cecil Mervin Ozirny ^(k)	Temporary Member

- (a) On 30 December, Roland Priddle retired after serving as Chairman since 1986.
- (b) On 31 December, Kenneth Vollman became Acting Chairman.
- (c) On 30 September, Roy Illing retired.
- (d) On 27 May, Robert Andrew resigned.
- (e) On 4 September, Diana Valiela was appointed Member for a term of seven years.
- (f) On 4 September, Rowland Harrison was appointed Member for a term of seven years.
- (g) In 1996, Robert Fournier was appointed Temporary Member for the review of the Sable Gas Projects applications.
- (h) On 23 April, Richard Revel was appointed Temporary Member for a term of nine months.
- (i) On 4 September, Gaétan Caron was appointed Temporary Member for a term of two years.
- (k) On 31 October, Cecil Mervin Ozirny was appointed Temporary Member for a term of nine months.

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University of
Pittsburgh



NATIONAL

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ENERGY

A n n u a l

BOARD

R e p o r t



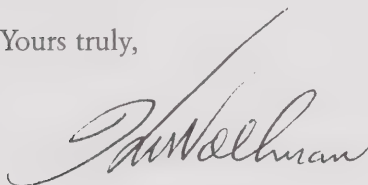
29 March 1999

The Honourable Ralph Goodale, P.C., M.P.
Minister of Natural Resources
Ottawa, Ontario

Dear Mr. Goodale:

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 1998, in accordance with the provisions of Section 133 of the *National Energy Board Act*, R.S.C. 1985. C. N-7.

Yours truly,

A handwritten signature in cursive script, reading "Kenneth W. Vollman". The signature is written in dark ink and is positioned above the printed name and title.

Kenneth W. Vollman
Chairman

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as represented by the National Energy Board

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Chairman's Letter

In 1998, the Board sat for 121 days of hearings on a number of applications for new pipeline facilities. In the course of these proceedings, three important themes emerged: a desire for increased choice in gas transportation services; the need for clarity in the environmental review process; and increased public involvement in Board hearings.

The major hearing of the year was the application by Alliance Pipeline Ltd. for a new high-pressure pipeline that would transport natural gas and natural gas liquids from northeast British Columbia and northwest Alberta to the Chicago area. The application was approved after 77 hearing days. Once constructed, this project will provide an alternative transportation option for natural gas and natural gas liquids producers who wish to access markets in the U.S. midwest.

The Board approved applications by AEC Suffield Gas Pipeline Inc. and Northstar Energy Corporation for short pipeline projects that would bypass NOVA Gas Transmission Ltd.'s system in southeast and southwest Alberta respectively. The dominant issues in these hearings were increased choice for natural gas shippers and the potential impacts of the new projects on existing pipeline systems. The estimated capital cost of these and other pipeline projects approved in 1998 is approximately \$3.6 billion.

The Alliance application featured the completion of a Comprehensive Study Report (CSR) by the Board, pursuant to the *Canadian Environmental Assessment Act*. The CSR required approval by the Minister of the Environment after completion of the Board hearing, and this additional post-hearing step introduced considerable uncertainty into the process. In partnership with the Canadian Environmental Assessment Agency and other federal departments, the Board developed a pilot process under which project applicants would prepare the CSR and submit it for Ministerial approval prior to a regulatory hearing. The Board expects that this approach will provide greater certainty to parties with respect to the overall regulatory process for major new pipeline projects.

The Board held detailed route hearings for Maritimes and Northeast Pipeline Management Ltd.'s project in Nova Scotia and New Brunswick, and for the proposed route of the Portland Natural Gas Transmission System, an extension of the Trans Québec & Maritimes Pipeline Inc. system to be built in southern Quebec. These were only the second and third detailed route hearings the Board has held, and are indicative of increased public interest in the potential impacts of pipeline facilities on landowners' rights, the environment and public safety.

The Board conducted extensive public consultations to assist in developing its long-term outlook, *Canadian Energy Supply and Demand to 2025*, scheduled for release in June 1999.

The Board was active in encouraging the industry to prepare for the Year 2000 computer issue and collaborated with a number of industry groups to develop a questionnaire for pipeline companies regarding their preparations. The Board is receiving quarterly updates and will monitor the situation to ensure that Board-regulated pipeline companies have taken the necessary steps to address the problem.

The Auditor General of Canada conducted a thorough audit of the Board's operations and submitted a comprehensive report to Parliament. The report contained seven recommendations which pertained to desired improvements in safety and environmental monitoring, and in internal managerial instruments. The Board welcomed the Auditor General's review of its operations and is implementing the recommendations.

1998 was my first year as Chairman of the NEB. By the end of the year, we had completed a comprehensive strategic planning exercise that clarified our key goals. As a result of this important undertaking, we will be in a position to better concentrate our energies on important safety, environmental, and economic efficiency aspects of NEB activities, and on meeting the needs of the public to effectively engage in NEB matters.

I am confident that our team of Board Members and staff will continue to deliver results that provide real benefits to Canadians.

A handwritten signature in dark ink, appearing to read 'K. Vollman', with a stylized, flowing script.

Kenneth W. Vollman

Highlights

The Changing Regulatory Landscape

In 1998, the Board witnessed major changes in the structure of the Canadian natural gas transmission industry. Most significantly, TransCanada PipeLines Limited (TransCanada) became the owner of NOVA Gas Transmission Ltd. (NGTL). The new company, known as TransCanada, is now the largest carrier of natural gas in North America. Through its ownership of ANG Pipeline and its majority interest in Foothills Pipe Lines Ltd. (Foothills), at year-end TransCanada effectively controlled all of the capacity to transport natural gas out of Alberta.

At the same time that TransCanada was extending its market position, it was also facing the prospect of entry by new companies. The Board heard and approved an application by Alliance Pipeline Ltd. (Alliance) to construct the Canadian portion of a new high-pressure natural gas pipeline from northeast British Columbia and northwest Alberta to the Chicago market area. The Alliance project, planned to be in-service by 1 November 2000, will introduce direct competition to TransCanada and Foothills for the transportation of Canadian gas to the U.S. midwest market.

In the Maritimes, construction started on Maritimes & Northeast Pipeline Management Ltd.'s (M&NP) pipeline system, which will carry natural gas produced offshore of Nova Scotia to markets in Nova Scotia, New Brunswick and New England.

Once the M&NP project and the Alliance project are completed, the Canadian gas transmission industry will be dominated by a few large companies. The entry of Alliance raises the prospect of competition with significant benefits to gas shippers, while posing challenges to incumbent pipelines.

At the same time that competition may be enhanced, some of these companies will have a large degree of market power, particularly in regional markets.

These changes in market structure will challenge the Board to ensure that Canadians have access to a range of pipeline services that meet their needs at reasonable prices, while also ensuring that pipeline companies have an opportunity to earn a fair return on their investment capital.

Increased Choice in Transportation Services

Perhaps the most significant regulatory event for the Board in 1998 was the proceeding on the Alliance application, which spanned 77 hearing days and three provinces. The Board heard extensive commercial opposition to the Alliance project until an accord was signed by a number of parties, which resulted in TransCanada and NGTL withdrawing substantial portions of evidence filed in opposition to the application.

The Alliance proceeding also featured considerable evidence submitted by individual landowners and environmental groups who were concerned about the potential impacts of the project. To fulfil the requirements of the *Canadian Environmental Assessment Act* (CEA Act), the Board completed a Comprehensive Study Report (CSR) and submitted its recommendations to the Minister of the Environment. The report found that the project was not likely to cause significant adverse environmental effects as long as appropriate mitigation measures were implemented. The Minister accepted the Board's recommendations and returned the report to the Board to complete its process. The Canadian portion of the Alliance project was approved by the Board in November.



The Board also heard applications from AEC Suffield Gas Pipeline Inc. (AEC Suffield) and Northstar Energy Corporation (NEC) to build pipelines to carry natural gas from southern Alberta to southwest Saskatchewan and southeast British Columbia, respectively. Both pipelines would allow shippers to bypass the NGTL system, thereby offering increased choice for the transmission of gas out of southern Alberta.

During the AEC Suffield and NEC hearings, the Alberta Department of Energy (ADOE) filed motions challenging the Board's jurisdiction over these facilities. The Board denied the ADOE's motions and approved both the applications. The ADOE subsequently applied to the Federal Court for leave to appeal the Board's ruling and for a stay of the Board's approval of the NEC application. The Federal Court granted ADOE's leave to appeal and stayed the Board's decision to approve the project.

Expansion of Existing Facilities

Canada's existing pipelines continued to expand their transmission systems in 1998. Of particular significance were expansion applications from Enbridge Pipelines Inc. (Enbridge, formerly IPL Energy Inc.), TransCanada and Trans Québec & Maritimes Pipeline Inc. (TQM).

The Board considered an application by TransCanada to construct new pipeline and compression facilities on its natural gas transmission system. In the application, TransCanada indicated that it would construct facilities to meet only a portion of its forecasted net incremental requirements because it expected that some shippers would be decontracting on its system. TransCanada proposed other arrangements (referred to as the Alternative Mechanism) by which it would satisfy the remaining volumes. The Board approved TransCanada's application, and found TransCanada's reliance on the

Alternative Mechanism, in this instance, to be an appropriate means of reducing the contract and equipment cancellation risks faced by the company.

The Board also approved an application by TQM to extend its system from Lachenaie to East Hereford, Quebec. The extension will supply markets in the Eastern Townships of Quebec and transport natural gas to the Portland Natural Gas Transmission System (PNGTS) in New Hampshire. The Board conducted a public hearing in Montreal and Magog-Orford, Quebec and prepared a CSR in conjunction with the Department of Fisheries and Oceans.

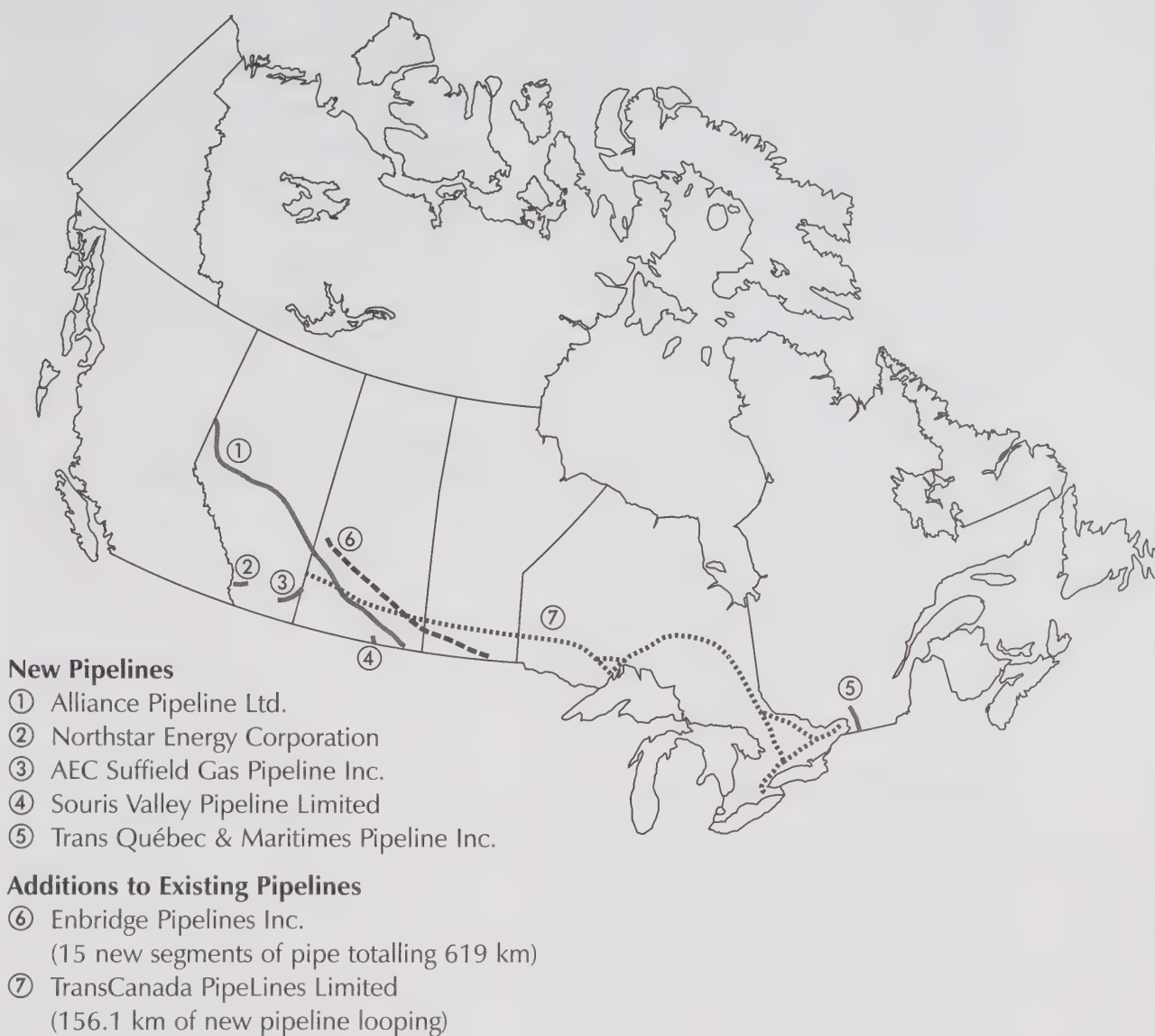
Following a public hearing in April, the Board approved the first phase of Enbridge's Terrace expansion project. The project involves the construction of 15 new sections of pipe to connect existing loops and the creation of a fifth pipeline between Kerrobert, Saskatchewan and Gretna, Manitoba. The pipeline will be used primarily to satisfy export markets. It features a tolling agreement between Enbridge and its shippers under which Enbridge's return on equity on the capital invested is partly dependent on the cost effectiveness of construction.

Throughout the course of the year, the Board issued five certificates for pipeline projects exceeding 40 kilometres in length and over 100 orders for smaller pipeline projects. To obtain more detailed information on these projects, please refer to Appendices B1, B2, C1, C2 and D1 in the companion document to this report.

Increased Public Involvement

During 1998, the NEB witnessed unprecedented interest from the public in the detailed routes proposed for approved pipeline projects.

Figure 1
Significant Pipeline Approvals in 1998



After receiving Board approval to build a natural gas pipeline from Goldboro, Nova Scotia to St. Stephen, New Brunswick, M&NP asked the Board to approve a detailed route. In response to 35 written statements of opposition concerning the detailed route, the Board held public hearings in Fredericton and Moncton, New Brunswick and in New Glasgow, Nova Scotia. Of the 17 cases considered during the hearings, the Board

approved M&NP's proposed route for 12, denied the proposed route for three, and reserved its decision on the remaining two, pending the filing of additional information from M&NP.

The Board also held a detailed route hearing for the proposed route to bring natural gas onshore for the Sable Offshore Energy

Project (SOEP) and approved the onshore pipeline route proposed by SOEP.

Thirty written statements of opposition to TQM's proposed detailed route for the PNGTS Extension led the Board to hold a public hearing in Magog-Orford, Quebec. In its decision, the Board determined that TQM had chosen the best possible detailed route for the pipeline and had committed to the most appropriate methods and timing of construction.

In an effort to facilitate public involvement in, and a greater understanding of, the Board's activities, public information sessions continue to be held across the country. During the past year, the Board held public hearings in six provinces. The Board conducted public seminars at ten different locations to explain the hearing process and the process through which detailed routing and land acquisition matters are addressed. The Board also conducted consultations on the assumptions for its next Supply and Demand report in eight cities across the country.

Continued East Coast Activity

Pipeline activity continued to be strong on Canada's East Coast in 1998. Construction of the first significant offshore pipeline approved under the *National Energy Board Act* (NEB Act) commenced near Sable Island in late 1998. M&NP began tree clearing for a new pipeline right of way in November and the installation of a major gas plant commenced near Goldboro, Nova Scotia.

In addition to the M&NP and SOEP detailed route hearings, the Board approved an application from M&NP to build and operate a natural gas lateral pipeline from the company's main transmission pipeline near Goldboro to Point Tupper, Nova Scotia. In 1999, the Board expects to hear applications from M&NP to construct laterals to Halifax and Saint John.

First Commodity Pipeline Approved by the Board

An application from Souris Valley Pipeline Limited to build a carbon dioxide pipeline resulted in the Board's first public hearing to consider transmission facilities for a commodity other than oil or gas. After hearing considerable evidence concerning safety issues, the Board approved the construction of the pipeline which will carry carbon dioxide from the North Dakota border to the Weyburn oil field near Goodwater, Saskatchewan. The carbon dioxide will be used to extend the life of the existing oil field by an estimated 25 years.

Regulatory Efficiency and Industry-Sponsored Solutions

During the past year, a number of activities were undertaken by the Board and external parties in an effort to reduce unproductive regulatory burden on companies.

In partnership with the Canadian Environmental Assessment Agency and other federal departments, the Board developed a process to reduce the regulatory uncertainty currently associated with the preparation of CSRs. Under this process, the Board will continue to administer the review process as lead responsible authority under the CEA Act, but applicants will now be responsible for preparing the CSR. By requiring an applicant to complete the CSR prior to a regulatory hearing, parties will know earlier in the process whether a project will be referred for a panel review. In cooperation with M&NP, the Board plans to pilot the new process in 1999 for the proposed Halifax and Saint John lateral projects.

Following the 1997 incentive-based negotiated toll settlement between Westcoast Energy Inc. (Westcoast) and its shippers, the Board approved the *Framework for Light-Handed Regulation* as applied for by the same parties. The Framework outlines the

mechanism by which Westcoast's tolls for gathering and processing services will be increasingly governed by market forces and negotiation, rather than through active financial regulation by the Board.

The tolls on most of the major pipelines under the Board's jurisdiction are determined to a large extent by the terms of negotiated settlements. The settlements are designed to eliminate the need for costly annual rate hearings, to provide incentives to pipeline companies to deliver cost-effective service that meets their shippers' needs, and to provide opportunities for the pipelines to increase their earnings.

To reflect the findings of past inquiries, incident investigations, and revised technical standards, the Board has been drafting new *Onshore Pipeline Regulations* (OPR). The revised OPR will be more focussed on pipeline maintenance and will be more goal oriented. Goal-oriented regulation identifies the results that pipelines must achieve and gives them some latitude as to how the results are met.

The Board and the Canadian Energy Pipeline Association also worked together during 1998 to identify tools that could be updated or developed to facilitate the processing of routine applications made pursuant to section 58 of the NEB Act.

Safety and Environmental Regulation

The Auditor General of Canada conducted a comprehensive review of the Board's operations in 1998. The Auditor General's report contained three recommendations pertaining to the Board's management of its safety and environmental monitoring and inspection processes.

With respect to its environmental inspection program, the Board has strengthened its internal documentation practices to ensure that information obtained during inspections can be used in future inspections. The Board is examining the conditions for environmental protection that it typically imposes when approving a pipeline to determine whether they are accomplishing the desired results. The NEB has also begun to systematically monitor the compliance of regulated companies with these conditions.

To ensure that inspection resources are being used effectively, the Board has begun to use risk-based methodology to determine the appropriate level of inspections. The Board will also use this methodology to assist in the development of future inspection schedules.

With respect to safety programs, the NEB has initiated a program to track the status of, and to determine trends in, the recommendations issued by the Board following a pipeline incident. The database will include incidents that have occurred over a five-year period and will be continuously updated.

Energy Market Analysis

The NEB monitors energy supply and markets on an ongoing basis and publishes its findings in various reports. The Board is currently developing its long-term outlook, *Canadian Energy Supply and Demand to 2025*, aided by extensive public consultation. The initial consultations were conducted in April, and the preliminary results were released for further public comment. The release of the final report is scheduled for June 1999.



Energy Overview

As an expert regulatory tribunal, the NEB must have sound knowledge of energy matters relevant to its mandate. This overview provides a summary of Canadian energy supply, consumption, production, prices and trade over the last five years, with an emphasis on 1998 data and activities.

Canadian energy production and consumption continued to increase slightly during 1998. Energy imports increased by almost nine per cent in 1998, while energy exports rose by about five per cent.

The world oil market weakened in 1998 due to the dampening effects on world oil demand of economic problems in Asia. At the same time, production from non-OPEC countries continued to rise. Oil production cuts from OPEC and some non-OPEC producers failed to balance the market. Consequently, oil prices declined dramatically from the post-Gulf War highs achieved in 1997 to 12-year lows. The price for benchmark crude West Texas Intermediate (WTI) averaged approximately U.S.\$14.40 per barrel in 1998, down 30 per cent from 1997.

In Canada, conventional light crude oil production increased in 1998, primarily due to the East Coast offshore Hibernia field which completed its first full year of production. Synthetic crude, pentanes plus and bitumen production also rose. However, conventional heavy crude oil production declined as a significant number of wells were shut in because of low prices.

Overall, oil exploration and development activity decreased in Canada in 1998, as a result of the sustained low oil prices. Many western Canadian producers shifted their focus toward gas drilling. However, in contrast to the overall slowdown in activity in western Canada, the East Coast offshore regions and onshore areas north of the

60th parallel saw some increased oil and gas exploration and development.

North American natural gas prices were down slightly from 1997, and Canadian natural gas prices remained at lower levels than average U.S. market prices. Although natural gas production decreased slightly, exports increased by about six per cent over 1997 levels. Drilling for natural gas remained at similar levels to 1997 and, although data are not yet available, the Board expects that reserves additions replaced a large portion of production in 1998.

Canadian electricity exports fell slightly from the near-record levels seen from 1994 to 1997. Imports rose to meet increased domestic requirements, due in part to the temporary removal from service of seven nuclear power plants in Ontario.

For greater detail, statistical appendices have been prepared as a companion document to the Annual Report with details on crude oil, petroleum products, natural gas and natural gas liquids; electricity supply and disposition; industry activity; facility certificates; orders and licences for exports; and pipeline financial information (see List of Appendices in Supplement VI).

Energy and the Canadian Economy

Canada is a country endowed with large reserves of key energy resources, including petroleum, natural gas, coal and hydroelectric potential. By drawing on this great wealth, the energy sector plays an important role in the Canadian economy. However, the collapse of oil prices in 1998 resulted in a decline of almost two per cent in the total economic value of energy production from 1997 and an estimated 13 per cent decline in the value of all energy exports. In 1998, the energy industry accounted for approximately seven per cent of total Gross Domestic

Product and about eight per cent of total merchandise exports, and employed about 280,000 Canadians.

Canadian energy production expanded by about eight per cent between 1994 and 1998. Petroleum led the way with production rising 15 per cent, while natural gas production rose 11 per cent. In contrast, by 1998 nuclear power production had declined 37 per cent from 1994 highs. In 1998, natural gas and petroleum accounted for 72 per cent of total energy production in Canada (Table 1). Strong production levels have been stimulated by robust growth in the North American economy and by aggressive investment in exploration and development.

Table 1
Domestic Energy Production
by Energy Source
(Petajoules)

	1994	1995	1996	1997	1998 ^(a)
Petroleum	4 843	5 013	5 146	5 379	5 585
Natural Gas	5 353	5 648	5 846	5 950	5 919
Hydroelectricity	1 175	1 198	1 269	1 242	1 192
Nuclear	1 221	1 108	1 065	944	799
Coal	1 735	1 801	1 833	1 898	1 978
Renewables & Other	522	579	548	588	613
Total	14 848	15 346	15 707	16 001	16 086

a) Estimates

Canada's energy consumption per capita is traditionally quite high due to its climate, its energy intensive resource-based economy and the long distances between its population centres. Domestic energy demand has been growing at almost two per cent per annum since 1994, adding up to an eight per cent increase in total Canadian consumption by 1998. About 40 per cent of the energy consumed went to meet space heating and transportation requirements (Table 2).

Canada generates a large energy trade surplus which, over the 1994 to 1998 period, has yielded an average of \$11.0 billion dollars per year in revenue (Figure 2). In 1998, total gross

Table 2
Domestic Energy Consumption
by End Use
(Petajoules)

	1994	1995	1996	1997	1998 ^(a)
Space Heating	1 874	1 915	2 001	1 993	2 030
Transportation	2 027	2 070	2 130	2 189	2 263
Other Uses ^(b)	3 314	3 473	3 543	3 608	3 713
Non-Energy Use ^(c)	745	727	845	807	829
Electricity Generation ^(d)	1 979	2 029	1 901	1 885	1 902
Total	9 939	10 214	10 420	10 482	10 737

a) Estimates

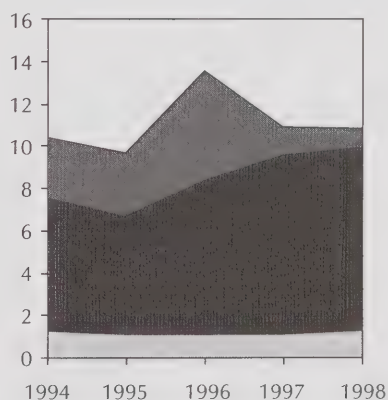
b) Includes energy used for space cooling and ventilation, as well as a variety of uses in the industrial sector

c) Includes energy used for petrochemical feedstock, asphalt, lubricants, etc.

d) Includes producer consumption and losses as well as a nuclear energy conversion requirement

export earnings for natural gas, petroleum and electricity were valued at \$19.7 billion, which led to an energy trade surplus of \$10.7 billion.

Figure 2
Net Energy Export Revenues from
Major Exports
(\$ Billions)



□ Electricity ■ Natural Gas ■ Crude, NGLs and Products

Petroleum export revenues fell to an estimated \$9.3 billion in 1998, down from \$12.3 billion in 1997. On the other hand, low oil prices also resulted in lower spending on petroleum imports. Imports fell to about \$8.5 billion, leaving Canada with a trade

surplus in petroleum of \$0.8 billion, down from \$1.2 billion in 1997. Natural gas export revenues continued their upward growth, generating \$8.8 billion in 1998. Moreover, since imports are minimal, natural gas accounted for 80 per cent of the total energy trade surplus.

Crude Oil and Natural Gas Liquids

International Markets

From a producer standpoint, oil markets deteriorated markedly in 1998. The over-supply situation that developed late in 1997 worsened in 1998 as the economic crisis which had started in southeast Asia affected other parts of the world. Despite several meetings of OPEC members and two separate agreements by OPEC to cut production, the actual production cuts were not sufficient to offset growing oil stocks. On average during 1998, the excess of supply over demand was estimated to be nearly 159 thousand cubic metres (one million barrels) per day and, consequently, crude oil prices declined steeply. The price of WTI at

Cushing, Oklahoma dropped from U.S.\$17 to U.S.\$11, while the price of Brent (U.K.) crude fell below U.S.\$10 in December (Figure 3). Warm winter weather at the beginning and at the end of 1998 also dampened the demand for heating fuel.

Production and Reserves Replacement

Canadian production of crude oil and equivalent totalled approximately 345 900 cubic metres (2.2 million barrels) per day in 1998, surpassing the record level set in 1997 by more than four per cent (Table 3). The first full year of production at Hibernia, offshore Newfoundland, added some 10 300 cubic metres (64,800 barrels) per day of conventional light crude oil to Canadian supply. The resumption of operations at the Cohasset platform also contributed to increased production levels from offshore Nova Scotia. In western Canada, production records were set for pentanes plus, bitumen and synthetic crude oil at both the Syncrude Canada Ltd. and Suncor Energy Inc. (Suncor) integrated mining plants. The increase in synthetic crude oil supply was especially

Figure 3
World Crude Oil Prices
(\$U.S./Barrel)



Table 3
Canadian Production of Crude Oil and
Natural Gas Liquids
(thousand cubic metres per day)

	1994	1995	1996	1997	1998 ^{a)}
Conventional Light (East Coast)	4.4	4.3	3.7	2.7	13.6
Conventional Light (WCSB)	144.1	140.8	136.3	132	127.1
Synthetic	41.6	43.2	42.3	43.2	45.3
Pentanes Plus	24.6	25.0	26.4	27.4	27.8
Total Light	214.7	213.3	208.7	205.3	213.8
Conventional Heavy	65.7	73.4	82.2	88.4	86.8
In-situ Bitumen	21.2	23.7	26.1	37.8	45.2
Total Heavy	86.9	97.1	108.3	126.2	132.0
Total Crude Oil and Equivalent	301.7	310.4	317.0	331.5	345.9
Natural Gas Liquids	80.6	86.3	91.2	93.5	93.4

a) Estimates

Note: numbers may not total due to rounding

significant at the Suncor plant where daily output jumped by about 50 per cent following the opening of its fixed plant expansion project in July and its new Steepbank Mine in September.

Low world crude oil prices negatively affected the production of conventional crude oil in western Canada. It is estimated that about 10 000 cubic metres (62,900 barrels) per day of potential production, mainly heavier crude oil types, were shut in for economic reasons. This resulted in the first year-on-year downturn in conventional heavy crude oil production since 1982, and it exacerbated the decline in conventional light oil production from the Western Canada Sedimentary Basin (WCSB). Conventional light crude oil production declined by six per cent in Alberta, overshadowing increases in British Columbia, Saskatchewan and Manitoba.

While production was declining in the WCSB, the Hibernia Field produced four million cubic metres (25 million barrels) in its first full year of production. Hibernia wells are producing at high rates and are the most productive oil wells in Canada.

The Board's estimate of remaining conventional crude oil and crude bitumen reserves at year-end 1997, the last year for which data are available, is 1 280.4 million cubic metres (8.1 billion barrels), down two per cent from 1996 (Table 4). As a result of high exploration activity levels in 1997, remaining reserves, excluding bitumen, increased as reserves additions replaced 105 per cent of the production of conventional crude oil.

At year-end 1997, remaining reserves of conventional crude oil totalled 666 million cubic metres (4.2 billion barrels), an increase of four per cent from year-end 1996 (Table 5). From 1993 to 1997, on a cumulative basis, additions to established reserves of conventional light and heavy crude oil replaced 90 per cent of production.

Remaining reserves of crude bitumen in active oil sands projects were estimated to be 614 million cubic metres (3.9 billion barrels) at year-end 1997, a decrease of seven per cent from 1996.

Table 4
Estimates of Established Reserves of
Crude Oil and Bitumen at
31 December 1997
(million cubic metres)

Conventional Crude Oil	Initial	Remaining
British Columbia ^(a)	110.8	23.4
Alberta ^(b)	2 451.7	326.9
Saskatchewan ^(c)	693.5	190.6
Manitoba ^(d)	37.1	4.7
Ontario ^(e)	13.7	1.8
NWT and Yukon:		
Arctic Island & Eastern Arctic Offshore ^(f)	0.3	0
Mainland Territories - Norman Wells	37.5	11.3
Nova Scotia ^(g) - Cohasset and Panuke	7.5	1.7
Newfoundland ^(h) - Hibernia	106.0	106.0
Total	3 458.1	666.4
Crude Bitumen		
Oil Sands - Upgraded Crude ^(b)	376.7	274.0
Oil Sands - Bitumen ^(b)	644.0	340.0
Total	1 020.7	614.0
Total Conventional & Bitumen	4 478.8	1 280.4

a) British Columbia Ministry of Energy and Mines and NEB common database

b) Alberta Energy and Utility Board and NEB common database

c) Saskatchewan Energy and Mines estimate for 31 December 1996, NEB updated to 31 December 1997

d) Manitoba Energy and Mines

e) Canadian Association of Petroleum Producers

f) Bent Horn abandoned 1996

g) Canada-Nova Scotia Offshore Petroleum Board

h) Canada-Newfoundland Offshore Petroleum Board

Note: numbers may not total due to rounding

Table 5
Conventional Crude Oil Reserves,
Additions and Production - 1993 to
1997
(million cubic metres)

	1993	1994	1995	1996	1997	Total
Additions	83	47	89	56	86	361
Production	75	78	80	81	81	403
Total Remaining Reserves	688	657	666	642	666*	

*Includes reserves from Hibernia

Industry Activity

In western Canada, a total of 9,744 wells were drilled in 1998, a decrease of 41 per cent from the record level seen in 1997 (Figure 4). Only 3,142 oil wells were completed during 1998, 63 per cent less than in 1997. Oil well drilling, except for production maintenance, was low due to depressed oil prices. The decline in drilling resulted in lower reserves additions for 1998 and, when data are complete, will likely show that production exceeded reserves additions. Horizontal well drilling, an indicator of the level of development drilling, was down 54 per cent. The average well depth in 1998 increased about 130 metres (to 1 240 metres) while the drilling success rate dropped slightly to just over 50 per cent.

Total lease and licence sales in western Canada totalled 3.9 million hectares in 1998, down about 40 per cent from 6.9 million hectares in 1997. Revenues from land sales also dropped to \$747 million from \$1.5 billion the previous year (Figure 5). Eighty per cent of the land sold was in gas areas. Finally, geophysical

activity also was down 20 per cent in 1998 from the previous year.

Crude Oil Exports

Total crude oil exports in 1998, including pentanes plus and synthetic, are estimated at 209 900 cubic metres (1.3 million barrels) per day, up 34 per cent from 1994. The 1998 total was composed of approximately 95 000 cubic metres (602,900 barrels) per day of light crude oil and equivalent and approximately 114 100 cubic metres (718,800 barrels) per day of blended heavy crude oil.

The estimated value of crude oil exports in 1998 was \$6.9 billion, compared with \$8.9 billion in 1997. Although export volumes increased, revenues declined as a result of lower oil prices. In 1998, the estimated average light and heavy crude oil export price was \$118.00 and \$84.00 per cubic metre (\$18.70 and \$13.30 per barrel) respectively, compared to 1997 prices of \$168.50 and \$127.50 per cubic metre (\$26.60 and \$20.20 per barrel) respectively (Figure 6).

Figure 4
Number of Wells Drilled

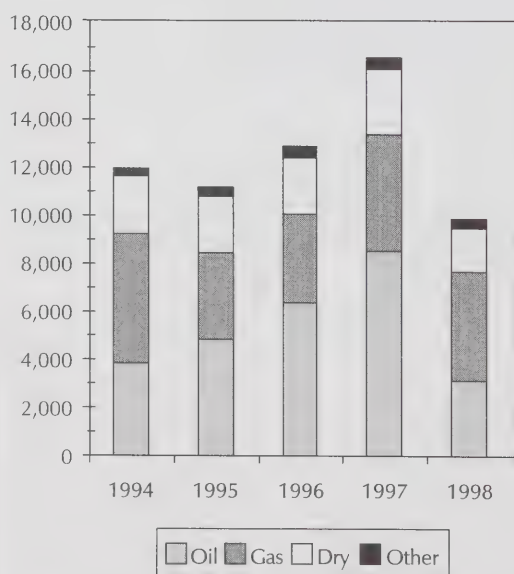


Figure 5
Sales of Exploration Rights in Western Canada
(\$ Millions)

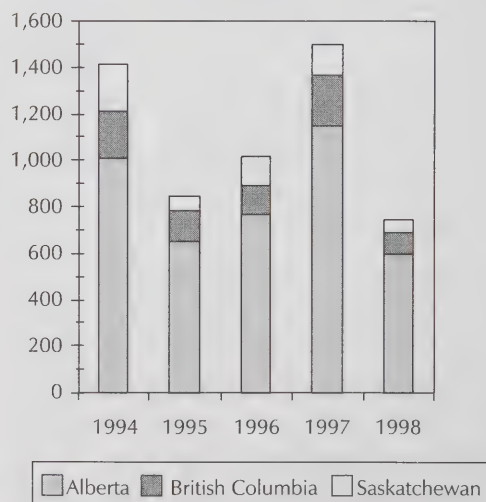
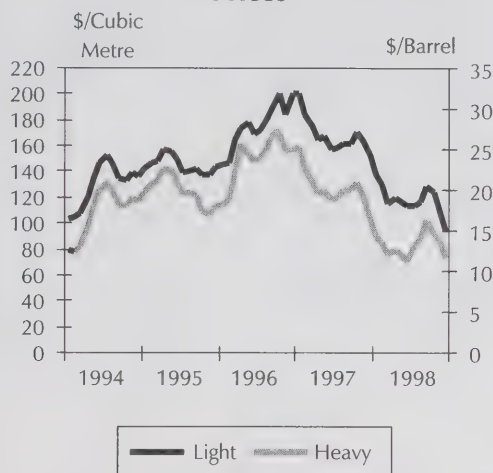


Figure 6
Light and Heavy Crude Oil Export Prices



The U.S. Midwest continued to be Canada's most important market, followed by Montana and Washington (Figure 7). Smaller volumes were shipped from the Canadian East Coast to the U.S. East Coast, Gulf Coast and Rotterdam. The largest export buyers of light crude oil in 1998 were, by rank: Mobil Oil Corporation (Mobil); Marathon Ashland Petroleum Canada Ltd.; Shell Oil Company; Koch Refining Company (Koch); and Sun Company Inc. For heavy crude oil, the largest foreign buyers were Koch, Amoco Production Company, Canada Petroleum Company Ltd., Mobil and PDV Midwest.

Crude Oil Imports

In 1998, crude oil imports were 122 600 cubic metres (772,400 barrels) per day, up 24 per cent from 1994. These imports represented almost 47 per cent of total refinery feedstock requirements in Canada. The Atlantic region and Quebec imported almost all of their needs. Ontario refiners imported about 23 per cent of their feedstock requirements, and other regions did not import crude oil.

North Sea crude accounted for 41 per cent of total imports, compared to 47 per cent in 1997, while crude oil originating from OPEC countries was down to 39 per cent from

43 per cent. Imports from other sources accounted for 20 per cent, up from 10 per cent in 1997.

Oil Refining

In 1998, the demand for petroleum products in Canada averaged 253 800 cubic metres (1.6 million barrels) per day, an increase of three per cent over 1997. Refinery production rose to 263 000 cubic metres (1.7 million barrels) per day.

Refinery receipts of domestic crude oil averaged 139 500 cubic metres (0.9 million barrels) per day, a decrease of three per cent from 1997.

Main Petroleum Product Exports and Imports

In 1998, exports of main petroleum products and partially processed oil fell by nine per cent to 37 200 cubic metres (234,400 barrels) per day. This reflects a decrease in shipments of motor gasoline and middle distillate. The estimated revenue from these exports was \$1.6 billion in 1998, down from \$2.3 billion in 1997. This revenue excludes product exports from crude oil processing agreements for which prices are not assigned. The decrease in revenues is a result of a reduction in both volumes and prices.

Imports of main petroleum products in 1998 averaged 19 900 cubic metres (125,400 barrels) per day, an increase of 12 per cent from the previous year. Imports of motor gasoline and heavy fuel oil grew substantially.

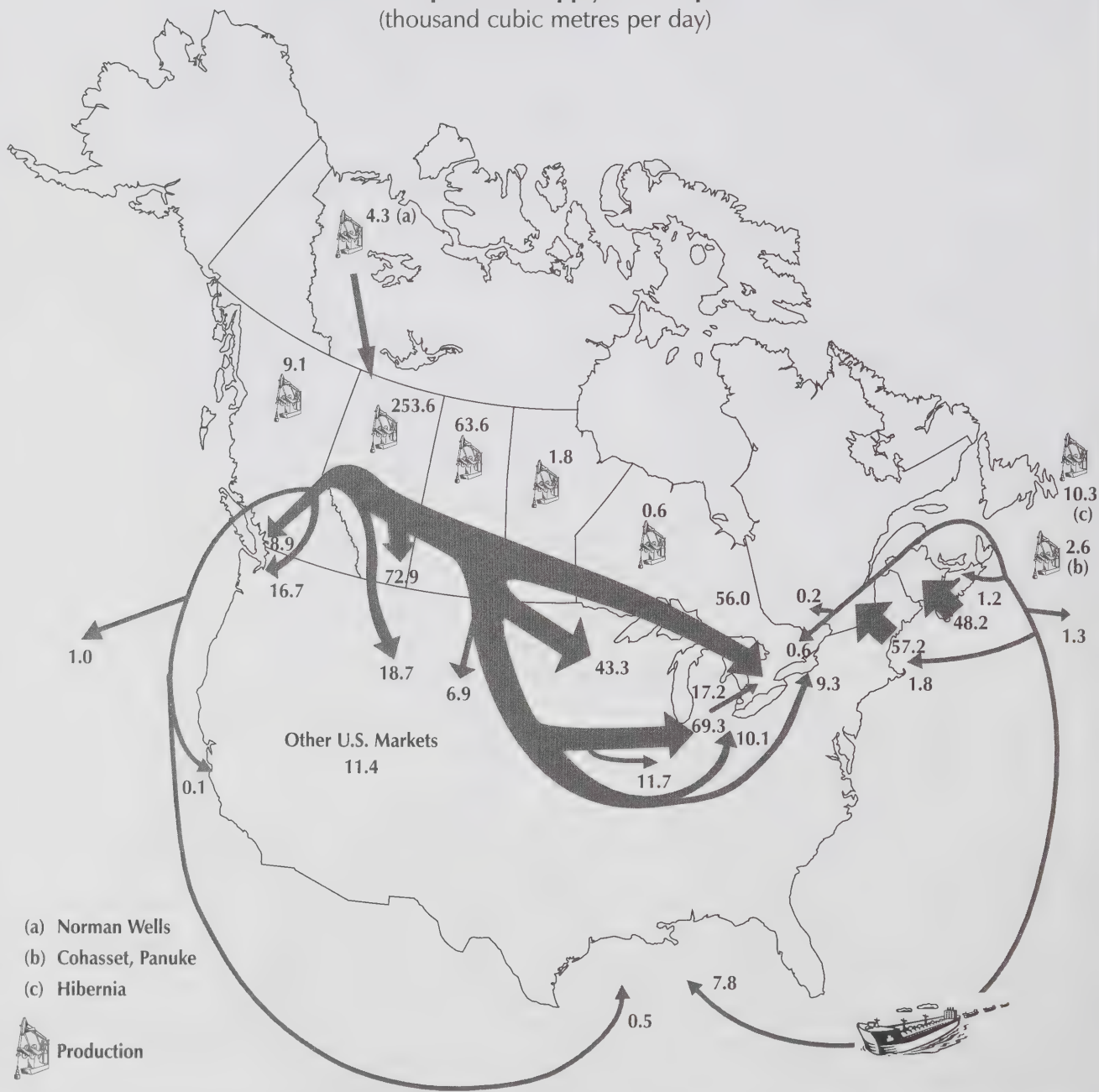
The U.S. continued to be the largest buyer of petroleum products, accounting for almost 94 per cent of total exports. The U.S. East Coast was the largest market, followed by the Midwest. Exports were also made to the Far East and Europe. The largest exporters of main petroleum products were, by rank: Irving Oil Limited; North Atlantic Refining Ltd.; Imperial Oil Limited; Ultramar Limited; and Shell Canada Products Limited.

Oil Pipeline Capacity

For the first half of 1998, the Edmonton-Sarnia portion of Enbridge Pipelines Ltd.'s (Enbridge) system operated at capacity. However, for the remainder of the year, Enbridge had spare capacity on its system as shippers shut in production rather than sell at

the prevailing low oil prices. Trans Mountain Pipe Line Company Ltd.'s system operated at capacity for only three months in 1998. Throughput information is not publicly available for the system owned and operated by Express Pipeline Ltd.

Figure 7
Crude Oil and Equivalent Supply and Disposition 1998
(thousand cubic metres per day)



Natural Gas Liquids **(excluding Pentanes Plus)**

Production of natural gas liquids (NGLs) from gas plants and refineries in 1998 is estimated at 93 400 cubic metres (588,420 barrels) per day. Ethane production was 35 100 cubic metres (221,130 barrels) per day, propane production was 34 300 cubic metres (216,090 barrels) per day, and the production of butanes was 24 000 cubic metres (151,200 barrels) per day. Ethane production was about the same as in 1997, while production of propane and butanes declined by about one per cent.

Exports of NGLs during 1998 were 36 500 cubic metres (229,950 barrels) per day, an 18 per cent increase from 1997. Ethane exports were 4 400 cubic metres (27,720 barrels) per day, propane exports were 24 000 cubic metres (151,200 barrels) per day and butanes exports were 8 100 cubic metres (51,030 barrels) per day. Ethane, propane and butanes exports increased from 1997 levels by seven, seven and 19 per cent, respectively. The increase is attributed to lower domestic demand and mild temperatures during the fourth quarter.

The U.S. Midwest continued to be Canada's largest market for propane and butanes, accounting for 75 per cent of the total export volume. Smaller amounts were delivered to the U.S. East Coast and West Coast. The largest exporters of propane were, by rank: Amoco Canada Petroleum Company Ltd.; Kinetic Resources (LPG); Canada Imperial Oil Ltd.; and Petro-Canada Hydrocarbons Inc., while the major exporters of butanes were Amoco, Kinetic and Petro-Canada.

The estimated value of exports of NGLs in 1998 was \$0.8 billion, compared with \$1.1 billion in 1997. Although export volumes increased in 1998, weaker prices contributed to lower revenues.

Natural Gas

Production and Reserves Replacement

Natural gas production in 1998 was 159 billion cubic metres (5.6 trillion cubic feet (Tcf)), just slightly below that of 1997. Alberta accounted for 83 per cent of production, British Columbia produced 12 per cent, Saskatchewan produced four per cent, and the remainder was produced in Ontario and the Northwest Territories. From 1993 to 1998, production increased by 21 per cent.

Gas drilling, although still largely directed at development to maintain production levels, moved toward previously less explored areas of western Canada and slightly higher levels of exploratory drilling. During 1998, 4,585 gas wells were completed, down five per cent from 1997 (Figure 4). However, gas wells accounted for 47 per cent of the overall drilling in 1998, compared to 29 per cent in 1997. Gas wells represented 58 per cent of all development wells and 21 per cent of all exploratory wells drilled. British Columbia had a record drilling year, the majority of wells drilled being for gas development.

The Board's estimate of remaining established reserves of marketable natural gas as of year-end 1997 (most recent data) is 1 698 billion cubic metres (59.9 Tcf), and now includes 85 billion cubic metres (3.0 Tcf) near Sable Island¹ offshore the East Coast (Table 6). The volume of total remaining reserves declined by one per cent from 1996 to 1997. Without the addition of Sable reserves, the decline would have been six per cent. Although data are not yet available, the Board expects that reserves additions will replace a large portion of production in 1998.

¹Drilling on the Sable Gas project commenced in June 1998 and production is expected to begin in November 1999 at a rate of 14 million cubic metres (495 million cubic feet) per day.

Table 6
Estimates of Established Reserves
of Marketable Natural Gas at
31 December 1997
 (billion cubic metres)

	Initial	Remaining
British Columbia ^(a)	559	229
Alberta ^(b)	3 717	1 284
Saskatchewan ^(c)	180	79
Ontario ^(d)	44	13
NWT and Yukon	18	8
Nova Scotia - Sable ^(e)	85	85
Total	4 603	1 698

a) British Columbia Ministry of Energy and Mines and NEB common database

b) Alberta Energy and Utility Board and NEB common database

c) Saskatchewan Energy and Mines estimate for 31 December 1996, updated by NEB to 31 December 1997

d) Canadian Association of Petroleum Producers

e) Canada-Nova Scotia Offshore Petroleum Board

From 1993 to 1997, cumulative additions of marketable gas reserves replaced 61 per cent of total production. The addition of 45 billion cubic metres of reserves in 1997 (1.6 Tcf), excluding Sable reserves, was the lowest in recent years (Table 7). The concentration on development drilling to increase deliverability resulted in lower reserves additions in 1997 and, consequently, total remaining reserves declined.

Table 7
Natural Gas Reserves,
Additions and Production
 (billion cubic metres)

	1993	1994	1995	1996	1997	Total
Additions	107	81	166	50	45	449
Production	131	142	150	159	160	742
Total Remaining Reserves	1 874	1 813	1 829	1 721	1 698	

Natural Gas Exports and Imports

In 1998, approximately 55 per cent of Canadian natural gas production was exported. This percentage has grown steadily from about 35 per cent 10 years ago. Canadian natural gas exports now supply

approximately 14 per cent of the U.S. market for natural gas.

Natural gas exports to the U.S. increased by six per cent in 1998 to 87.4 billion cubic metres (3.1 Tcf). While pipeline capacity limitations continued to constrain further growth in exports, gas exports during the summer low season increased by 10 per cent compared to the previous year. The exchange rate and demand for storage injection volumes in the U.S. contributed to the increased sales.

Canadian gas exported under short-term orders, issued for a period of up to two years, continued to increase, and reached 61.6 billion cubic metres (2.2 Tcf) in 1998, up from 53.5 billion cubic metres (1.9 Tcf) in 1997. Sales under short-term orders represent over 70 per cent of total gas exports. The remainder is exported under long-term authorizations, the majority of which have terms of not more than 10 years.

Export sales were distributed as follows: 35 per cent to the Midwest; 23 per cent to California; 23 per cent to the Northeast; 18 per cent to the Pacific Northwest; and one per cent to the Mountain region (Figure 9). Compared with total Canadian natural gas production, imports are relatively

Figure 8
Natural Gas Export Prices
(at the international border)
 (\$Cdn./GJ)

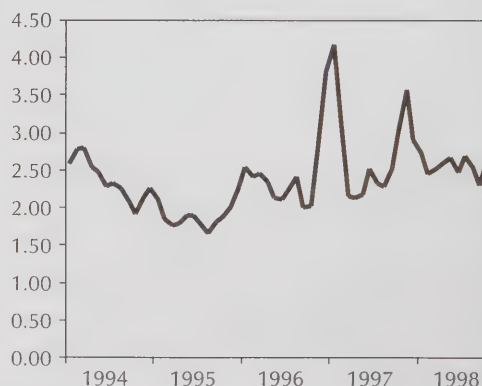
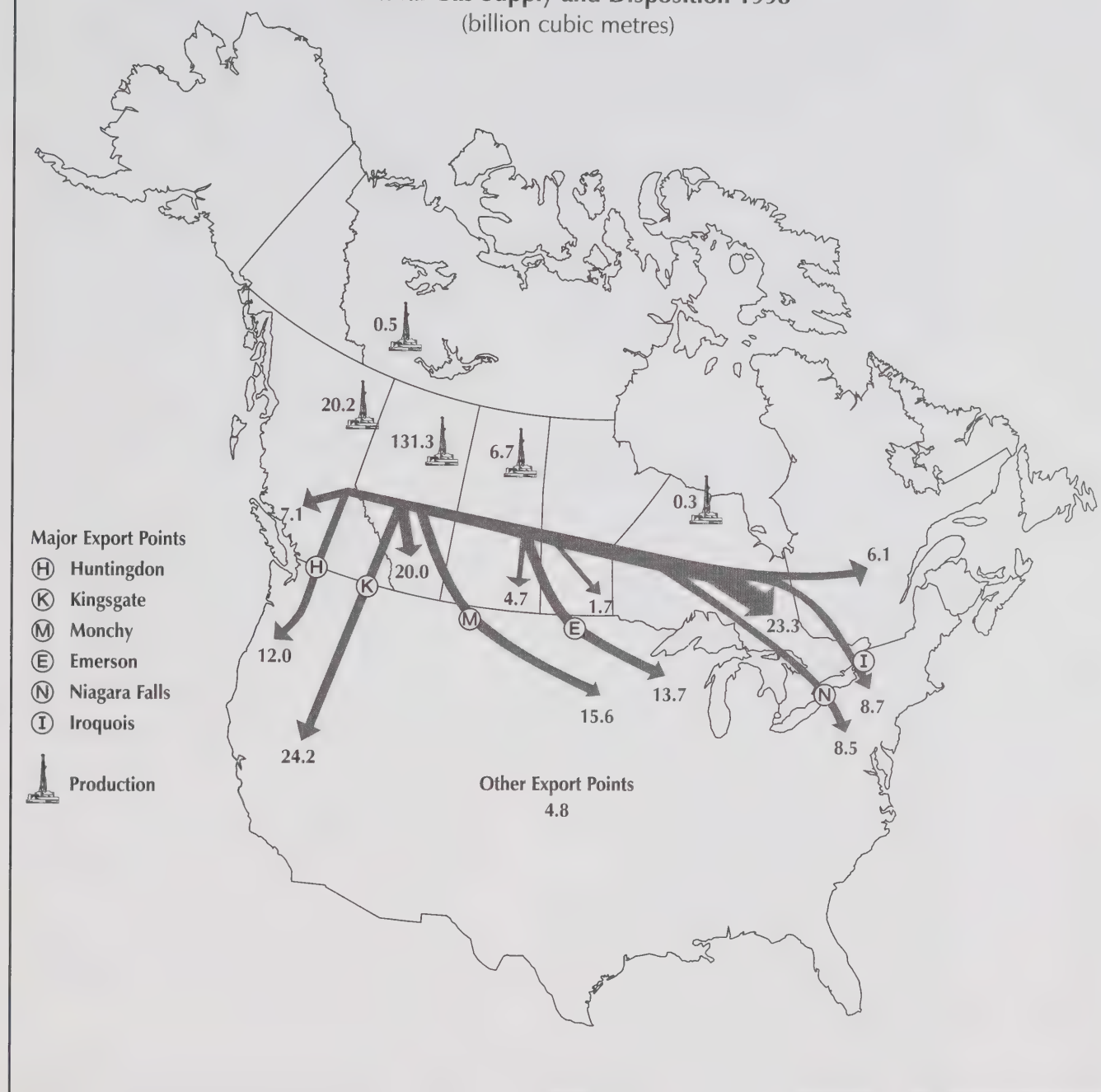


Figure 9
Natural Gas Supply and Disposition 1998
 (billion cubic metres)



minor, reaching about one billion cubic metres (0.04 Tcf) in 1998.

Natural Gas Export Prices

In 1998, the average price of natural gas exports to the U.S. was \$2.63 per gigajoule (GJ) as measured at the export border point, down

five per cent from \$2.77 per GJ in 1997 (Figure 8). The price of firm volume exports fell seven per cent from 1997 to \$2.66 per GJ in 1998, and the price of interruptible export volumes decreased marginally to \$2.51 per GJ.

Total revenue from natural gas exports increased to \$8.8 billion from \$8.7 billion in 1997.

Natural Gas Pipeline Capacity

In 1998, the average load factor on Canadian gas export pipelines was over 95 per cent, indicating that most pipelines operated at or near capacity. In the last quarter, expansions on the TransCanada and Foothills PipeLine systems resulted in 31.2 million cubic metres (1.1 billion cubic feet) per day of additional export capacity. With a recent expansion of Trans Québec & Maritimes Pipeline Inc.'s system, a further 5.0 million cubic metres (175 million cubic feet) of export capacity is expected to be in service the first quarter of 1999.

Electricity

In recent years, there has been considerable discussion about the potential for creating competitive markets for electricity generation in Canada. Major plans for the restructuring of electricity markets, with the goal of introducing competition, have been underway in the U.S. for a number of years. Briefly, the Federal Energy Regulatory Commission (FERC) is attempting to create a competitive electricity market in the U.S. by providing multiple sources of generation with access to a regulated electric transmission grid.

Changes in Canadian electricity markets have, in part, been driven by the restructuring efforts in the U.S. However, Alberta was the first jurisdiction in North America to implement a competitive framework for its electricity market. Restructuring in some other provinces has also provided limited transmission access to non-utility generators and neighbouring utilities. For example, British Columbia has implemented an open access transmission tariff to effect wholesale transmission within British Columbia and on the inter-ties to Alberta and the U.S. Manitoba, Ontario and Quebec have or are planning to open their transmission systems to gain reciprocal wholesale access to open U.S. markets.

TransAlta Energy Marketing Corp., the British Columbia Power Exchange Corporation and Hydro-Québec have obtained FERC power marketing certificates, allowing them access to U.S. markets.

Hydro-Québec has unbundled its transmission and generation divisions but has no plans to break up the electricity generation portion of its business. There are no plans to change the existing dominance in generation by the crown-owned utilities in British Columbia, Saskatchewan and Manitoba. Ontario is expected to move to wholesale and retail competition by 2001, and Ontario Hydro's market dominance will be removed by 2010. New Brunswick is currently conducting consultations which could lead to market changes. Nova Scotia Power Inc., operating as a private entity since 1992, has been reorganized into separate divisions responsible for transmission and distribution, power production and customer services and marketing. In Newfoundland, the Public Utilities Board has undertaken a review of the future direction of regulation.

Although a number of provinces are taking action to open their markets, there is no parallel action to create a national electricity market in Canada. In part, this reflects the reality that most electrical inter-ties naturally occur in a north-south direction because of the distances between major Canadian centres, and the advantages of trade with the U.S. due to such things as the opportunity for seasonal interchanges.

Electricity production increased by one per cent from 1994 to 1998, with the share from nuclear declining while hydroelectric and thermal production have been increasing (Table 8). In 1998, approximately 61 per cent of generation was from hydroelectric sources, 27 per cent from conventional thermal and 12 per cent from nuclear generation. Total Canadian consumption is estimated to have been 518 terawatt hours.

Table 8
Electricity Production^(a)
(terawatt hours)

	1994	1995	1996	1997	1998 ^(b)
Hydroelectric	329	336	353	345	331
Nuclear	131	142	150	78	66
Thermal	103	114	118	131	149
Total	540	542	559	554	546

a) Source: Statistics Canada

b) Estimate

Electricity Exports and Imports

Electricity exports, while down somewhat from 1997, have experienced consistent, strong performance since 1994. Export growth has been strong due to increased demand in U.S. markets and favourable hydraulic conditions in Canada.

The effort to provide open access to transmission in the U.S. has had little measurable effect on total Canadian exports yet. Although the quantity of just over 39 terrawatt-hours was down from the previous four years, export revenues were the largest ever, at nearly \$1.6 billion. While electricity prices have fluctuated since 1994, the average price of firm exports has risen 11 per cent, and the price of interruptible exports has risen 42 per cent (from \$25.14 to \$36.01/MW.h).

Five utilities supplied about 95 per cent of Canada's electricity exports in 1998. In order of quantities exported, these utilities are: Hydro-Québec, Manitoba Hydro, B.C. Hydro, New Brunswick Power and Ontario Hydro. Ontario Hydro's 1998 exports decreased from the previous year due to the temporary removal from service of some of its nuclear plants. Exports of firm and interruptible electricity were about equal for 1998, partly due to transmission constraints which limited opportunities for interruptible exports. During the preceding four years, interruptible exports were about 60 per cent of total exports.

Minnesota was the biggest single U.S. importer of electricity, followed by the New England states and the state of Washington (Figure 10). These three destinations accounted for over 60 per cent of exports.

As with natural gas, Canada's electricity imports are small, approximately 12 terawatt-hours in 1998. Almost 80 per cent of the imports went to British Columbia and Ontario, with Ontario accounting for slightly more than half.

Figure 10
International and Interprovincial Transfers of Electricity 1998
 (gigawatt hours)



a) Data for interprovincial transfers of electricity are from 1 November 1997 to 31 October 1998 and are compiled from Statistics Canada's Electric Power Statistics Monthly.

Data for United States imports and exports are for 1998 (excludes exchanges) and are compiled by the NEB.

Safety and Environment



The NEB has regulatory responsibility for public and occupational health and safety, as well as protection of the environment, when facilities or operations fall under the *National Energy Board Act* (NEB Act) or the *Canadian Oil and Gas Operations Act* (COGO Act¹).

Although the primary responsibility for safety and environmental matters rests with the owner of the facilities, the Board ensures that the risks associated with the construction and operation of regulated facilities are properly assessed and managed by the facility owner and operator.

In addition to the requirements of the NEB Act and the COGO Act, the Board is required to meet the requirements of the *Canadian Environmental Assessment Act* (CEA Act). The Board, as a responsible authority under the CEA Act, ensures that environmental assessments, including follow-up monitoring requirements, are properly conducted for projects under its jurisdiction.

The NEB's safety and environmental program consists of four integrated parts:

- assessing new facilities applications for associated safety and environmental issues;
- developing regulations and guidelines which reflect best practices;
- monitoring construction and operation to ensure that any issues identified at the time of the application are resolved and that facilities are built and operated in accordance with the regulations; and
- investigating any failures or incidents which occur, with the intent of preventing similar incidents from recurring.

The integration of these four areas is very important to effective risk management. The Board has taken concerted steps to enhance

its ability to fulfil its environmental and safety role.

New Applications

Safety and environmental issues are first considered when an application for new facilities is submitted. In 1998, the Board considered several new projects in which safety and environmental issues were an important factor in the system design. The Sable Offshore Energy Project (SOEP) project included the construction of a major gas plant near Goldboro, Nova Scotia and the first offshore pipeline under NEB jurisdiction. The Alliance pipeline system, designed to transport gas from northeast B.C. and Alberta to the Chicago area, will use a relatively new technology to transport dense-phase natural gas under high pressure over a long distance. The Souris Valley pipeline will be the first commodity pipeline under the Board's jurisdiction to carry carbon dioxide gas.

In accordance with the CEA Act, the Board conducts environmental screenings of proposed facilities. Upon receiving an application, staff determine if a review is required under the CEA Act. If so, the review, which includes input from other Responsible Authorities and advice from expert departments, ensures that all the CEA Act requirements are examined before a decision is made on the application. Even when an application does not trigger a CEA Act review, the Board considers the environmental aspects of the project in accordance with the NEB Act. As well, for COGO Act applications, the Board is required to ensure that oil and gas activities are carried out safely, in a manner which protects the environment and involves sound reservoir conservation practices.

¹The COGO Act sets out the Board's regulatory powers with respect to oil and gas exploration and activities on frontier lands not otherwise regulated under joint federal/provincial accords.

In 1998, the Board also assessed 114 applications under the COGO Act. This was an increase of 24 per cent over the previous year and primarily related to increased oil and gas exploration activity in the Fort Liard area. Included in the total were 15 applications for drilling new wells.

Under the COGO Act, the first development plan in the North in several years was approved at the end of 1997. The Ikhil project will move gas in a buried pipeline from wells in the Northwest Territories to the Town of Inuvik. The Ikhil gas reservoir, controlled by the Inuvialuit Petroleum Corporation (IPC), was further developed in 1998 with the repair of the IPC Ikhil K-35 well and the drilling of two new wells for further reservoir control. IPC has applied for approvals to construct a pipeline from the Ikhil field to the Town of Inuvik, along with the facilities required for the production and treatment of the gas.

During 1998, the Board participated in the development of environmental screening guidelines under the new *Mackenzie Valley Resource Management Act* (MVRM Act) which replaces the CEA Act in that region. The MVRM Act ensures a greater role for Aboriginal people in an integrated system of land and water management and regulation in the Mackenzie Valley. The MVRM Act established a new environmental assessment and impact review process and various new boards for land use planning, land and water management, and environmental impact review. Potential impacts of oil and gas activities on land and water resources and the environment are examined by the NEB, as a Designated Regulatory Agency, and the new Mackenzie Valley boards.

Regulations and Guidelines

The NEB maintains a number of regulations for the safety of the public and company employees, and for the protection of the environment and property. For pipelines under NEB jurisdiction, the *Onshore Pipeline Regulations* (OPR) sets out the technical and safety requirements for all stages of a pipeline's life cycle. These regulations rely heavily upon standards developed by the Canadian Standards Association (CSA). The Board participates with industry and other government agencies in the development and maintenance of these standards. In 1998, the CSA standards for pipeline systems were updated to address new issues and technology. Major changes are planned to the OPR in 1999 to move towards goal-oriented regulation, increase the emphasis on pipeline maintenance, and incorporate the revised CSA standards.

The Board is active in developing and maintaining safety and environmental regulations pertaining to exploration and development activities pursuant to the COGO Act. These regulations are developed jointly with Natural Resources Canada (NRCan), the Canada-Newfoundland Offshore Petroleum Board and the Canada-Nova Scotia Offshore Petroleum Board (C-NSOPB) to ensure common regulatory standards for all frontier lands.

In 1998, consultations were undertaken to amend the following COGO Act regulations and guidelines: the *Canada Oil and Gas Drilling Regulations* and the *Canada Oil And Gas Production and Conservation Regulations*; the *Newfoundland Offshore Safety Regulations* and the *Nova Scotia Offshore Safety Regulations*; *Canada Oil and Gas Offshore Diving Regulations*; the *Guidelines Respecting Physical Environmental Programs during Petroleum Drilling and Production Activities on Frontier Lands*; and the *Chemical Selection Guidelines and the Frontier Sampling Guidelines*.

The Board participated with industry, other levels of government and other stakeholder groups in a number of initiatives to develop common national regulatory approaches to safety and environmental issues. For example, in November 1998, the Canadian Pipeline Water Crossing Committee (CPWCC), an ad hoc group of federal and provincial agencies, as well as industry and environmental associations, hosted the Watercourse Crossing Guidelines Workshop. More than 120 people representing industry, government and public organizations discussed the draft guidelines for pipeline stream crossings that had been developed by the Committee. Based upon the comments received, the CPWCC will finalize these guidelines in 1999.

Construction Monitoring

When approving a facilities application, the Board often attaches conditions which must be satisfied prior to or during the construction or operation of a project. In 1998, a total of 539 conditions were placed on the 152 facilities approvals issued by the Board, of which a significant number related to environmental matters. Companies must also construct and operate facilities in accordance with the Board's regulations. The Board monitors the construction of pipeline facilities to ensure these requirements are met, as well as any commitments made by a company during the assessment of a project. An environmental compliance program is conducted to ensure that regulated companies protect the environment during the construction of facilities and restore any lands which are disturbed.

In 1998, a number of large pipeline projects were constructed. These projects included TransCanada PipeLine Limited's 1998 expansion involving 298 kilometres of looping, Trans Québec & Maritime's PNGTS project involving 214 kilometres of pipeline, 619 kilometres of pipeline looping by Enbridge Pipelines Ltd., and 106 kilometres

of new pipeline by AEC Suffield Gas Pipeline Inc. in southern Alberta and Saskatchewan. Construction also started on the SOEP gas plant and Maritimes and Northeast Pipeline Management Ltd.'s 568 kilometre pipeline. In addition, nine new companies came under the Board's jurisdiction with facilities approved in 1998. A number of these projects required a new right of way, which raised additional environmental issues.

During 1998, the Board conducted 51 site inspections on construction projects. During inspections, Board inspection officers verify plans and construction techniques and evaluate the effectiveness of the company's technical inspection program that oversees construction activities.

Given its shared jurisdiction with the C-NSOPB for the offshore portion of the SOEP pipeline, the Board appointed a C-NSOPB employee as an inspection officer pursuant to the NEB Act. This designation invests the inspection officer with authority to ensure safety matters are handled according to NEB requirements. The Board intends to train and appoint additional C-NSOPB employees in 1999 to ensure environmental and engineering matters can also be undertaken in keeping with NEB requirements.

In 1998, Board inspectors monitored the construction of 115 kilometres of large-diameter pipeline looping in southern Saskatchewan by Foothills Pipe Lines Ltd. The expansion had been approved by the Northern Pipeline Agency.

The Board requires that companies use qualified environmental inspectors to oversee construction activities. Typically, these individuals have the authority to select appropriate mitigative measures and to stop activities that may cause unnecessary impacts.

When construction is complete, companies are normally required to submit post-construction environmental reports to the Board. These reports identify environmental issues that arise during the construction period and the actions undertaken by the company to protect the environment. Following the next two growing seasons, additional reports are filed by the company to address outstanding environmental issues and to provide an evaluation of the recovery of the affected area.

When construction is complete, but before the facilities are put into operation, companies are required to apply for leave to open. Only when the Board is satisfied that the facilities are safe for operation will the Board grant leave to open the pipeline. The Board issued 148 orders granting leave to open in 1998.

Operations Monitoring of Existing Facilities

The Board has programs in place to assess and monitor the safety and environmental practices of over 40,000 kilometres of existing pipeline systems, operated by over 60 companies. Safety and environmental management audits are conducted at both company head offices and on-site.

In 1998, the Board conducted 14 safety management audits of 11 companies. During these audits, the Board examines operations and maintenance manuals, emergency response manuals, safety training programs, operations and maintenance records, and assesses safety-related operations issues with company personnel. Auditors visit selected facilities to confirm operating procedures are in compliance with those set out in company manuals. Audit findings indicate that companies are generally in compliance with the Board's requirements, although instances of non-compliance on minor matters are often found.

Board staff conducted 86 inspections of operating facilities in 1998. Facility inspectors check for compliance with NEB Act regulations and with the *Canada Labour Code* and its regulations. Only minor issues were identified, which typically were remedied quickly by the company involved.

The Board also conducts audits of third party damage prevention programs which are required by the *Pipeline Crossing Regulations*. These programs are focussed on improving the awareness of third parties and preventing damage to buried pipelines. Two audits were carried out in 1998.

In 1998, the Board hosted the second Public Awareness Workshop for pipeline companies. Over 100 pipeline company representatives gathered in Vancouver to hear presentations from industry leaders and share experiences. A record of the proceedings is available from the Board's publication office or web site.

The Board continued to monitor the implementation of the recommendations in the November 1996 report *Stress Corrosion Cracking (SCC): Public Inquiry Concerning Stress Corrosion Cracking on Canadian Oil and Gas Pipelines*. The inquiry report contains 27 recommendations pertaining to the development of company-specific SCC management programs, changes to the design of pipelines, continued research into SCC, the development of an industry-wide SCC database, improved emergency response practices and information sharing. Board-regulated companies did not record any SCC-related failures in 1998.

Pipeline rights of way under Board jurisdiction are checked periodically to confirm the effectiveness of ongoing environmental protection measures.

Noise emissions from compression and pumping stations are also checked on a regular basis. In 1998, the Board received

numerous monitoring reports from companies providing noise emission surveillance information regarding recent installations. The results of these reports will be incorporated into future Board inspections.

In the frontier lands, Board staff conducted a total of 53 inspections of exploration and production sites to ensure that operations were in compliance with approved program and regulatory requirements pursuant to the COGO Act.

Landowner Complaints

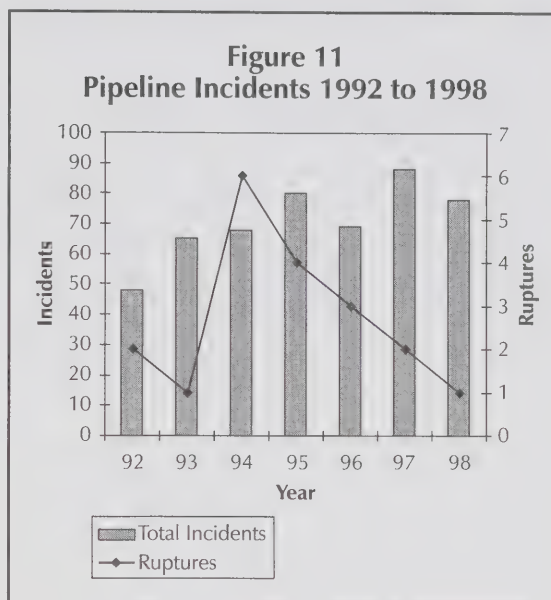
The Board responds to landowner complaints concerning impacts caused by the construction and operation of pipeline facilities. In most cases, the Board ensures that the company is made aware of the complaint and encourages the company to remedy the situation. The Board inspects some of these properties to verify that protection of the environment is achieved.

During 1998, the Board noticed an increase in the number of complaints made by landowners during construction. This is likely due to increased public awareness, particularly among landowners, regarding the Board's strict requirements for protection of the environment.

Incident Investigation

Under the *Onshore Pipeline Regulations*, companies must immediately report incidents to the Board. The definition of an incident includes any failure or malfunction of a pipeline, a fire or explosion, a liquids spill, a pipeline rupture, a fatality or an injury requiring hospitalization. The Board investigates incidents to determine if any trends are evident and to make recommendations to prevent similar occurrences in future. Even minor incidents can provide indications of the condition of a pipeline or of required improvement to safety

programs. Although the Board investigates all incidents, detailed on-site investigations are usually conducted only for accidents that result in serious injuries or significant releases of hydrocarbons.



In 1998, a total of 78 incidents were reported. This compares to 88 incidents the previous year and an average of 71 incidents for the years 1992-1998. Fifteen of these incidents resulted in 19 injuries to construction and maintenance personnel. Thirty-one incidents resulted in product being released.

Of the 78 incidents, the majority occurred at controlled areas such as compressor stations or gas plants. Thirty-six incidents occurred at compressor or pump stations, eight at gas plants, and the remainder occurred along pipeline rights of way.

Continuing a five-year trend of declining pipeline ruptures, only one pipeline rupture occurred in 1998. This involved Westcoast Energy Inc.'s Kobe Creek pipeline which failed in December. No injuries to either the public or company employees resulted. The Transportation Safety Board (TSB) is conducting an investigation into the rupture and a report is expected in 1999.

In 1998, the Board began revising its database system for collecting information about incidents. The Board plans to integrate this database with those of industry and other government agencies.

The Board ensures that all companies under its jurisdiction have adequate emergency response plans to deal with and reduce or mitigate any negative effects on personnel safety, public health or the environment resulting from oil spills or natural gas leaks. Response plans are examined to ensure adequate procedures are in place. In addition, the Board encourages and participates in company-sponsored emergency response exercises.

The Board's primary role during an emergency is to monitor the company's response, ensuring that all reasonable actions are being taken to protect public safety and the environment. In 1998, a total of 35 minor spills and releases occurred. Two of these events were inspected by the Board because the potential for environmental impact was present. In both cases, the company employed adequate measures to minimize impacts.

The Board monitors sites that have been affected by spills and releases until the sites have been adequately restored. An information tracking system has been created to ensure appropriate follow-up is

conducted and that the company involved fulfills its responsibilities.

Under COGO Act provisions, a total of 11 hazardous occurrences were reported in 1998, down slightly from 1997. Given the overall increase in activity levels north of the 60th parallel, the reduced number of injuries is a strong sign that companies are observing safe work practices.

In 1998, a total of 28 spills occurred in frontier areas. All of these sites have either been cleaned up by the company or are being appropriately managed through remediation plans which have been developed.

Transportation Safety Board (TSB)

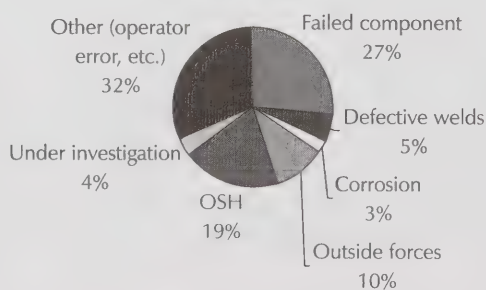
The NEB shares responsibility for the investigation of pipeline incidents with the TSB, a federal independent federal investigation agency. In accordance with an agreement between the two agencies, all incidents are initially reported to the TSB. If the TSB decides to conduct an investigation, the NEB may participate, but is prohibited from making public findings as to the cause and contributing factors of the incident. The TSB has the authority to issue recommendations and the NEB may be required to respond. The NEB can investigate to ensure that its regulations were not violated and/or to determine the need for remedial action. In order to avoid duplication of work, the two agencies coordinate their investigations.

In 1998, the TSB released two reports arising from major investigations involving Board-regulated facilities. Neither of these reports made recommendations directly relating to the NEB.

Year 2000 Preparedness

The Board is concerned about the possible effects that the Year 2000 may have on the integrity of facilities under its jurisdiction, particularly with respect to safety, continuity of service and protection of the environment.

Figure 12
Causes of Incidents in 1998



The Board undertook a number of actions in 1998 to address this issue.

The Board is monitoring the preparedness of regulated companies for the Year 2000. To facilitate this task, the NEB has divided regulated companies into two tiers. Tier 1 companies are considered to have the largest potential impact on the environment and welfare of the Canadian public. They are, for the most part, companies that deliver the highest volumes of oil and natural gas. All other regulated companies are included in the Tier 2 category.

The Board has directed Tier 1 companies to submit a summary report from a third party assessment on the Year 2000 problem regarding systems which have the potential to affect health, safety, the environment and continuity of service. In July, the Board requested that all Board-regulated companies provide information on their Year 2000 preparedness plan. This request included a requirement for progress reports to be submitted on a quarterly basis in 1998 and 1999.

Initial responses from the companies varied considerably in detail. All parties indicated that they were aware of the problem. Pipeline companies stated that they do not foresee any significant problems with their computer systems and expect to be prepared if any problems arise.

Enforcement

The Board uses a graduated approach to resolving minor instances of any non-compliance with terms, conditions or regulations. When a violation cannot be rectified immediately, but does not represent an immediate or serious hazard, the company is requested to provide the Board with an Assurance of Voluntary Compliance (AVC) detailing the deficiency and the steps planned to address it. If an AVC is not received by Board staff, a letter from the Board is sent to

the company. Hazardous situations which pose an immediate danger to property or the environment and necessitate immediate and direct action, are addressed through the issuance of an Order by an NEB inspection officer. Upon receipt of the Order, the company is compelled to rectify the situation. If a problem is not rectified, the Board can impose a penalty on the company.

As a result of this graduated approach, in 1998 no penalties were imposed and only one order was issued to address a potentially unsafe practice. In that instance, the company responded the same day and continued to address the issue for the remainder of the project.

The Board's experience is that the level of compliance of companies under its jurisdiction with regulations and approvals is high. To ensure the effective and efficient use of inspection resources, the Board is moving towards a risk-based methodology for determining the appropriate level of inspections and audits.

Research and Development

The Board acts as secretariat for the Environmental Studies Research Fund (ESRF), which finances environmental and social research projects pertaining to petroleum exploration, development, and production activities on frontier lands. Three new research projects are planned for 1999 due to increased activity on the East Coast. These projects are *Effects of Seismic Exploration on the East Coast Fishery*, *Practical Considerations for Cumulative Monitoring and Assessment in Eastern Canadian Offshore Areas*, and *Coastal Resource Inventory - Great Northern Peninsula (North Head, Bay of Islands to Cap Bauld)*.



Public Information Services

Whether explaining how to participate in a public hearing, sharing results of a pipeline safety audit or issuing a decision, the Board aims to provide information that is reliable and accessible. A wide variety of processes and tools are used to deliver information to Board Members, employees and the public. The Board's information management strategy is to continually move toward electronic document production and distribution, while accommodating paper documents for those who need them.

Electronic Regulatory Filing (ERF)

The NEB is proceeding with implementation of Electronic Regulatory Filing in concert with the Ontario Energy Board (OEB) and the regulated energy industry. The ERF initiative is aimed at creating a non-proprietary system for the creation, exchange, use and re-use of regulatory information in electronic formats. It will greatly enhance the ability of clients to participate in the regulatory process, regardless of their proximity to the Board's offices in Calgary.

In 1998, the NEB, in cooperation with the OEB and various external clients, successfully tested the electronic filing concept by creating documents in standard format and exchanging them over a central repository. Following this phase, a standard document structure was further defined and approved with broad input from external parties. Internally, a project team and implementation schedule was developed, while software and hardware were upgraded to be compliant with the ERF initiative.

The Board is currently accepting voluntary filings from industry, as well as requests to conduct "pilot" ERF proceedings of various types. Involvement in pilot projects, either as an applicant or intervenor, will familiarize participants with ERF technology and

modified regulatory processes before electronic filing becomes mandatory.

Preparing for Year 2000

The NEB views the Year 2000 and its consequences as a very serious matter which can potentially affect not only its own operations, but those of regulated companies. With this in mind, the Board has devised a strategy to address the Year 2000 issue. This strategy includes the creation of a project office which is responsible for internal activities and a team which communicates with industry and regulated companies.

The internal project office is managing processes for:

- identifying and analyzing the NEB's information technology systems;
- preparing contingency plans with components such as crisis scenarios, crisis response plans and business resumption plans;
- preparing a risk assessment for the NEB and work plans to address the concerns; and
- monitoring the Board's progress against the plans.

Communication Instruments

Internet Web Site

The Board's web site (www.neb.gc.ca) has been operating since 1996. With an average of 25,000 hits per month in 1998, the web site has become a key tool for accessing information about our organization. The site includes information about the Board's regulatory role, current regulatory proceedings and monthly energy statistics. In 1998, documents such as the Board's Annual Report, additional energy statistics and information about electricity applications

were added to the site. Development of the site and the addition of new information documents is ongoing.

Board Document System

The Board Document System (BDS) was created in 1995 to provide direct access to an electronic library of regulatory documents. This system contains Reasons for Decisions on public hearings dating from 1985 and hearing transcripts from 1991. The BDS will be integrated into the ERF document repository in 1999.

News Releases

Information about public hearings, Board decisions, public consultations and major changes to regulations and procedures were made available to the media and Canadians through 47 news releases in 1998. At the beginning of the year, the Board began encouraging clients to access news releases via the Board's web site rather than relying on copies sent by mail. News releases will continue to be available through the library and the mail list, but quicker access will normally be available through the web site.

Regulatory Agenda

For several years, the Board has published a quarterly *Regulatory Agenda* which provides information regarding regulatory applications and other Board matters. In 1998, the Board began providing monthly updates of this document on the web site. The quarterly *Regulatory Agenda* was mailed to those people who required a paper document.

Bulletins

The Board has published 13 information bulletins about popular topics. The bulletins are available through the NEB library or the Board's web site (see Supplement II for a list).

Other Information Services

Dial-In Sound Access

As a service to regulatory participants who are unable to attend proceedings, the Board has been offering dial-in sound access to most of its hearings. In 1998, the Board provided this service for 11 of its 12 hearings.

Library

The NEB has a specialized library consisting of reference materials, books and periodicals, as well as hearing applications and submissions, energy studies and speeches by Board Members. The library is open from 9:00 a.m. to 4:00 p.m. daily.

For More Information

For more information on any of the Board's services or activities, call (403) 292-4800 or send a facsimile to (403) 292-5503.

To order publications, contact:

Publications Coordinator
National Energy Board
444 Seventh Avenue S.W.
Calgary, Alberta
Canada T2P 0X8
Email: orders@neb.gc.ca
Phone: (403) 299-3562



Corporate Activities

The NEB as an Employer

The NEB is a federal public service organization located in Calgary. As a separate employer under the *Public Service Employment Act*, the Board has the flexibility to take advantage of opportunities inherent to a large organization while adapting many policies and procedures to reflect its unique requirements. For example, the Board has developed its own classification system which reflects the spectrum of NEB positions. In addition, terms and conditions of employment are negotiated directly with two unions that represent employees. At the same time, the Board is closely connected to the public service staffing process which provides access to job opportunities in other public service organizations across Canada.

As an employer, the Board's strategy is to provide reasonable remuneration and a positive and fulfilling working environment. It recognizes the importance of achieving a balance between work and home life and supports individual efforts to achieve that balance by offering flexible work arrangements. Opportunities for training, development and career growth are encouraged.

Strategic Management

Over the past few years, the NEB has positioned itself for success by adopting a multi-disciplinary, team-based structure to focus on strategic results. In 1998, the Board's strategic direction was further clarified by developing a multi-year plan. This plan allows for priorities to be identified, planning processes to be effective and results to be evaluated, as well as forging an essential link between the Board's strategic direction and the accountabilities of individual employees. In addition, it responds to recommendations of the Auditor General around performance reporting and the development of a human resource strategic plan.

The NEB also introduced a new performance management process last year. This process is designed to clarify the link between individual contributions and the desired outcomes of the organization. It encourages discussion and planning for professional development, while providing feedback on achievements.

Relocation to New Office Space

The NEB was housed at its 311 Sixth Ave S.W. location since moving to Calgary in 1991. When this lease expired, a public bidding process was held and new office space was procured at 444 Seventh Ave. S.W.

Moving the entire organization to a new location was accomplished over one weekend in August 1998. The relocation was on budget and completed with minimal disruption to the public the Board serves. The Board and Public Works and Government Services Canada staff were successful in reducing office space while providing employees with efficient and ergonomic accommodation.

Financial Spending

Since 1991, up to 90 per cent of the Board's operating costs have been recovered from the regulated community, rather than the taxpayer. In keeping with the Auditor General's recommendation, cost recovery negotiations between the Board and regulated industry were initiated in 1998. Their purpose is to review all aspects of the cost recovery regulations.

Table 9 shows the Board's expenditures and staff levels for the last five fiscal years. Additional information on budgets and plans may be found in the *NEB 1998-99 Estimates* and the *1999 Report on Plans and Priorities*. Both documents are available upon request.

Table 9
Historical Expenditures and Staffing

Fiscal Year (April 1 to March 31)	Expenditures \$000	Full-time Staff (or equivalent)
1994 - 1995	27 377	298
1995 - 1996	25 911	279
1996 - 1997	26 855	272
1997 - 1998	28 048	264
1998 - 1999 ^(a)	27 707	277

a) Estimate

Supplement I

The Board's Mandate

The National Energy Board is an independent regulatory tribunal established in 1959. It reports to Parliament through the Minister of Natural Resources Canada (the Minister). The Board is a court of record. With regard to attendance at hearings, the swearing and examining of witnesses, production and inspection of documents and the enforcement of its orders, it has the powers of a superior court.

At the end of 1998, the NEB had six permanent board members, out of a possible total of nine. Permanent board members are appointed for a term of seven years. Two temporary members were also appointed during the course of the year.

The Board's regulatory powers under the *National Energy Board Act* include granting authorizations for: the construction and operation of international oil, gas and commodity pipelines; construction and operation of international and designated interprovincial power lines; the setting of tolls and tariffs for oil and gas pipelines under its jurisdiction; the export of oil, natural gas and electricity, and the import of natural gas.

The Board also has regulatory powers under the *Canada Oil and Gas Operations Act* (COGO Act) and certain provisions of the *Canada Petroleum Resources Act* for oil and gas exploration and activities on frontier lands not otherwise regulated under joint federal/provincial accords.

The Board's mandate includes providing expert technical advice to the Canada-Newfoundland and the Canada-Nova Scotia Offshore Petroleum Boards, Natural Resources Canada and Indian and Northern Affairs Canada.

Under the *Canadian Environmental Assessment Act*, the Board is responsible for conducting environmental assessments of the planning, construction, operation, maintenance and abandonment of energy projects within its jurisdiction. Under the *National Energy Board Act* and the COGO Act, the Board's environmental activities have evolved into three distinct phases: evaluating the potential environmental effects of proposed projects; monitoring and enforcement of terms and conditions attached to project approval; and the ongoing monitoring of operations.

The Board is responsible for ensuring the safe operations of the pipelines under its jurisdiction and the Board's inspectors are appointed Safety Officers for the administration of Part II of the *Canada Labour Code*.

The Board provides advice to the Minister on matters relating to its regulatory expertise upon the Minister's request. The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*.

Below is a listing of Acts, Regulations, Rules and Guidelines under which the Board operates or has responsibilities.

Acts, Regulations, Rules and Guidelines

Acts

- National Energy Board Act
- Canada Oil and Gas Operations Act
- Canada Petroleum Resources Act
- Canadian Environmental Assessment Act
- Canada Labour Code Part II
- Energy Administration Act
- Northern Pipeline Act

Regulations Pursuant to the National Energy Board Act

Cost Recovery Regulations
Export and Import Reporting Regulations
Gas Pipelines Uniform Accounting Regulations
Oil Product Designation Regulations
Oil Pipeline Uniform Accounting Regulations
Onshore Pipeline Regulations
Part VI (Oil and Gas) Regulations
Part VI Regulations, Electricity
Pipeline Crossing Regulations, Part I
Pipeline Crossing Regulations, Part II
Power Line Crossing Regulations
Substituted Service Regulations
Toll Information Regulations

Regulations Pursuant to the Canada Oil and Gas Operations Act

Canada Oil and Gas Certificate of Fitness Regulations
Canada Oil and Gas Diving Regulations
Canada Oil and Gas Installations Regulations
Canada Oil and Gas Geophysical Regulations
Canada Oil and Gas Production and Conservation Regulations
Canada Oil and Gas Operation Regulations
Oil and Gas Spills and Debris Liability Regulations

Regulations Pursuant to the Canadian Environmental Assessment Act

Law List Regulations
Inclusion List Regulations
Comprehensive Study List Regulations
Exclusion List Regulations
Federal Authorities Regulations
Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements

Rules

Rules of Practice and Procedure

Guidelines

Guidelines for Filing Requirements (22 February 1995). The Guidelines set out the information to be provided by applicants for:

- Early public notification of projects
- Certificates for gas pipelines exceeding 40 kilometres
- Certificates for oil pipelines exceeding 40 kilometres
- Section 58 orders for gas pipelines under 40 kilometres or additions and upgrades to existing facilities
- Section 58 orders for oil pipelines under 40 kilometres or additions and upgrades to existing facilities.
- Environmental, socio-economic and lands information for authorization to construct, operate and abandon pipelines
- Notices required when dealing with determination of detailed routes and approval
- Leave to open orders for pipelines
- Orders fixing tolls and tariffs
- Quarterly surveillance reports to be filed by Group 1 companies
- Orders for export and import of gas.

Memorandum of Guidance - Concerning Full Implementation of the September 1988 Canadian Electricity Policy (Revised 26 August 1998)

Guidelines for Negotiated Settlements of Traffic, Tolls and Tariffs (23 August 1994)

Guidelines Respecting Physical Environmental Programs during Petroleum Drilling and Production Activities on Frontier Lands (April 1994)

Financial Regulatory Audit Policy of the
National Energy Board (1 December 1994)

Memorandum of Guidance - Regulation of
Group 2 Companies (6 December 1995)

Memorandum of Guidance - Retention of
Accounting Records by Group 1 Companies
Pursuant to Gas/Oil Uniform Accounting
Regulations (30 November 1994)

Memorandum of Guidance to Interested
Parties Concerning Full Implementation of
the September 1988 Canadian Electricity
Policy (2 April 1997)

Offshore Waste Treatment Guidelines
(September 1996)

Oil and Gas Occupational Safety and Health
Guidance Notes (April 1992)

Section 58 Streamlining Initiative - Order
XG/XO-100-94

Memorandum of Guidance - Fair Market
Access Procedure for the Licensing of Long-
term Exports of Crude Oil and Equivalent
(17 December 1997)

Supplement II

Documents

Information Bulletins

The Board publishes information bulletins on the subjects listed below:

- *Pipeline Route Approval Procedures*
- *The Public Hearing Process*
- *Non-Hearing Procedures*
- *How to Participate in a Public Hearing*
- *The Board's Publications*
- *The Regulation of Tolls and Tariffs*
- *The National Energy Board Library*
- *Electricity*
- *Protection of the Environment*
- *Pipeline Tolls and Tariffs: A Compendium of Terms*
- *The Frontier Information Office*
- *Pipeline Safety*
- *Pipeline Regulation: An Overview for Landowners and Tenants*

Major Documents Published in 1998

Pipeline Facilities

Trans Québec & Maritimes Pipeline Inc.
PNGTS Extension - GH-1-97
Reasons for Decision, April 1998

Northstar Energy Corporation
Natural Gas Pipeline - GH-1-98
Reasons for Decision, May 1998

Interprovincial Pipe Line Inc.
Oil Pipeline - OH-1-98
Reasons for Decision, June 1998

AEC Suffield Gas Pipeline Inc.
Natural Gas Pipeline - GH-2-98
Reasons for Decision, June 1998

Trans Québec & Maritimes Pipeline Inc.
Detailed Route - Portland Natural Gas
Transmission System
Extension - MH-2-98
Reasons for Decision, August 1998

Souris Valley Pipeline Limited
Carbon Dioxide Pipeline - MH-1-98
Reasons for Decision, October 1998

Maritimes & Northeast Pipeline Management
Ltd. - Sable Offshore Energy Inc.
Detailed Route Hearings - Pipeline Projects in
the Maritimes - MH-3-98 and MH-4-98
Reasons for Decision, October 1998

Alliance Pipeline Ltd.
Natural Gas Pipeline - GH-3-97
Reasons for Decision, November 1998

TransCanada PipeLines Limited
1999 Facilities - GH-3-98
Reasons for Decision, December 1998

Gas Exports

Various Gas Exports - GHW-2-97
Reasons for Decision, March 1998

Renaissance Energy Ltd. and
TransCanada Gas Services
Natural Gas Export - GHW-1-98
Letters of Decision - 10 July 1998

Electricity Exports

Citizens Power Sales
Electricity Export Permits - 25 June 1998

Nova Scotia Power Inc.
Electricity Export Permits - 10 July 1998

British Columbia Power Exchange
Corporation
Electricity Export Permits - 1 October 1998

Manitoba Hydro-Electric Board
Electricity Export Permit - 13 November 1998
B.C. Hydro and Power Authority
Electricity Export Permits - 17 December 1998

Reports

Trans Québec & Maritimes Pipeline Inc. -
PNGTS Extension
Comprehensive Study Report, February 1998

Non-Associated Natural Gas Resource
Assessment of Saskatchewan, October 1998

Estimate of Hydrocarbon Volumes in the
Mackenzie Delta and Beaufort Sea,
December 1998

Information

Regulatory Agenda - January, April, July and
October

National Energy Board, 1997 Annual Report,
April 1998

National Energy Board - Annual Report
Pursuant to the Access to Information Act
and Privacy Act, 1 April 1997 - 31 March 1998

Supplement III

Legal Proceedings

Applicants	Applications	Decisions
<i>Richard Leroux and 417 Auto Wreckers Limited v TransCanada PipeLines Limited</i> (Application dated 22 January 1996)	<p>An Application for Leave to Appeal and for judicial review of a decision of the NEB dated 22 December 1995 was filed in early 1996. The NEB Decision decided that the applicant had not sufficiently demonstrated that its quarrying operations and the aggregate which it extracted fell within the definition of mines and minerals contained in section 81 of the <i>National Energy Board Act</i>.</p> <p><u>Federal Court of Appeal</u></p> <p>On 6 May 1996, the Court granted the leave to appeal but only on a question of law concerning the Board's interpretation of section 81 of the NEB Act. The judicial review application was ordered struck out.</p> <p><u>Supreme Court of Canada</u></p> <p>The Appellant subsequently applied for an extension of time in which to file an Application for Leave to Appeal to the Supreme Court of Canada. The application was granted but no Application for Leave to Appeal was filed.</p>	On 27 May 1998, the Federal Court of Appeal dismissed the Appeal, thus sustaining the Decision of the NEB.
<i>Rocky Mountain Ecosystem Coalition (RMEC)</i> (Application dated 17 September 1998)	<p><u>National Energy Board</u></p> <p>An application for review by the Board was filed by RMEC. The Applicant sought review of all of the NEB's decisions as a responsible authority under the <i>Canada Environmental Assessment Act</i> in respect to the environmental scoping of the Alliance Pipeline Project.</p>	On 1 October 1998, the Board dismissed the application for review.
<p><i>Union Gas Limited (Union)</i> (Application dated 4 May 1998)</p> <p><i>Union Gas Limited v National Energy Board</i> - (Application dated 5 May 1998)</p>	<p><u>National Energy Board</u></p> <p>An application for review was filed with the Board by Union requesting that Decision GH-1-97, concerning tolling methodology for the Trans Québec & Maritimes Pipeline Inc. (TQM) - PNGTS Extension, be declared reviewable and the Board provide additional reasons for its Final Decision.</p> <p><u>Federal Court of Appeal</u></p> <p>An application for judicial review was filed in the Federal Court of Appeal in which an order of mandamus was sought from the Court to compel the Board to provide additional reasons for its GH-1-97 Decision concerning tolling methodology for the Trans Québec & Maritimes Pipeline Inc. (TQM) - PNGTS Extension.</p>	<p>On 19 June 1998, the Board denied the application by Union for review of the Board's Decision GH-1-97.</p> <p>At the end of 1998 this case had not been heard by the Court. On January 25, 1999 the application for judicial review was wholly discontinued without costs by Union Gas Limited.</p>

Applicants	Applications	Decisions
<p><i>The Industrial Cape Breton Community Alliance Group on the Sable Gas Project v Sable Offshore Energy Project et al</i> (Application dated 25 November 1997)</p>	<p>An application for judicial review was lodged in the Federal Court (Trial Division and Court of Appeal) in respect of the Sable Pipeline Project and the Report of the Commissioner of the Canada-Nova Scotia Offshore Petroleum Board.</p> <p>On February 12, 1998 an Order was made by the Court of Appeal transferring the entire matter to the Trial Division.</p> <p><u>Federal Court of Canada Trial Division</u></p> <p>On 13 January 1998, the Federal Court Trial Division heard a motion from the Cape Breton Alliance to add the Governor in Council, the Federal and Nova Scotia Environment Ministers, the NEB and the Canada-Nova Scotia Offshore Petroleum Board as Respondents to the judicial review. On 21 September 1998 that motion was denied.</p> <p>On 3 July 1998, the Trial Division fixed 3 May 1999 as the hearing date for the judicial review application.</p>	<p>At the end of 1998 this case had not yet been heard by the Court.</p>
<p><i>The Industrial Cape Breton Community Alliance Group on the Sable Gas Project v Sable Offshore Energy Project et al</i> (Application dated 11 February 1998)</p>	<p><u>Supreme Court of Nova Scotia</u></p> <p>An application for judicial review of the Report of the Sable Joint Review Panel was filed on 11 February 1998.</p> <p>On 6 July 1998 an Order was issued by the Court adjourning this matter sine die on consent of the parties.</p>	<p>At the end of 1998 this case had not been heard by the Court.</p>
<p><i>Alberta Department of Energy v Northstar Energy Corporation Ltd.</i> (Application dated 25 May 1998)</p>	<p><u>Federal Court of Appeal</u></p> <p>An Application for Leave to Appeal a Board ruling on jurisdiction and a subsequent final decision of the Board which authorized Northstar Energy Corporation to construct and operate an extra-provincial pipeline was filed in 1998. The grounds for the application were that the Board had no jurisdiction to authorize a pipeline which extended slightly beyond the boundaries of the Province of Alberta.</p>	<p>The Federal Court granted the leave to appeal and stayed the Board's GH-1-98 Decision. An appeal was subsequently filed by the Province of Alberta. At the end of 1998 this appeal had not been heard.</p>
<p><i>Tatham Offshore Inc.</i> (Application dated 9 January 1998)</p>	<p><u>National Energy Board</u></p> <p>An application for review and variation was filed in 1998 respecting the Board's decision GH-6-96 and Certificate GC-94 issued to Sable Offshore Energy Project (SOEP) and GC-95 issued to Maritimes & Northeast Pipeline Project (M&NPP).</p>	<p>On 27 January 1998, the Board dismissed the application for review.</p>
<p><i>Express Pipeline Ltd.(Express)</i> (Application dated 19 January 1998)</p>	<p><u>National Energy Board</u></p> <p>An application was filed for a review and/or consideration of a complaint for resolution of a dispute under the Treasury Board policy entitled "Cost Recovery and Charging Policy" of the Board's decision of 6 February 1997 to include Express under Schedule 1, Part 1 of <i>National Energy Board Cost Recovery Regulations</i> (CRR).</p>	<p>On 17 February 1998, the Board determined that Express had raised a reasonable doubt as to the correctness of the Board's decision of 6 February 1997 to amend the CRR. The Board declared its decision to be reviewable and directed that a review be conducted to determine whether the Board's decision should be rescinded or varied and the method or methods necessary to implement that decision.</p> <p>After conducting the subsequent review, the Board determined that its original decision was correct and issued a decision which confirmed the original decision.</p>

Applicants	Applications	Decisions
<i>BC Gas Utility Ltd. v National Energy Board et al</i>	<p><u>Supreme Court of Canada</u></p> <p>BC Gas Utility Ltd. appealed a judgement of the Federal Court of Appeal which had previously reversed a decision of an NEB panel (Mr. R. Illing dissenting) that dismissed a facilities application by Westcoast Energy Inc. The Board had ruled that the facilities in question were subject to provincial jurisdiction.</p>	The Supreme Court of Canada dismissed the appeal of BC Gas Utility Ltd. in March of 1998, thus sustaining the Federal Court of Appeal's reversal of the earlier NEB decision.
<i>Canadian Hunter Exploration Ltd. v National Energy Board et al</i> (Application dated August 22, 1996)	<p><u>Federal Court of Appeal</u></p> <p>An Application for Leave to Appeal dated 22 August 1996 was lodged by Canadian Hunter Exploration Ltd. The application challenged a decision of the Board which granted a section 58 exemption order for the construction and operation of an extra-provincial pipeline but which also directed that upstream facilities that were formerly under the jurisdiction of the Province be brought under the jurisdiction of the Board.</p>	<p>Leave to Appeal was granted 6 November 1996 and an appeal was subsequently filed.</p> <p>Interventions were filed by the Provinces of Alberta and British Columbia. At the end of 1998 this case had not yet been heard by the Court.</p>
<i>Union of Nova Scotia Indians et al v Maritimes and Northeast Pipeline Management Ltd. et al</i> (Application dated November 16, 1998)	<p><u>Federal Court of Appeal</u></p> <p>The Applicants filed an application for judicial review in respect of a decision of the NEB which declared that Maritimes & Northeast Pipeline had satisfied a condition pertaining to aboriginal roles and responsibilities contained in a Certificate of Public Convenience and Necessity issued to the company.</p> <p>On 19 November 1998, the Applicants filed a motion for an Order deeming the judicial review application to be an Application for Leave to Appeal.</p>	At the end of 1998 this case had not yet been heard by the Court.

Supplement IV

Companies Regulated by the NEB

The following is a list of the pipeline companies and electric power entities which own and/or operate interprovincial or international pipelines or power lines under the Board's jurisdiction. The pipeline companies have been divided into two groups. Group 1 consists of the major pipeline companies which are subject to active regulatory oversight by the National Energy Board. The other pipeline companies under the Board's jurisdiction have been classified as Group 2 companies.

For purposes of cost recovery, there are three classifications: large, intermediate and small. The criteria for determining a company's classification is based on its size, throughput and cost of service.

Group 1 Gas

ANG Pipeline
Alliance Pipeline Ltd.
Foothills Pipe Lines Ltd.
Maritimes and Northeast Pipeline Management Ltd.
TransCanada PipeLines Limited
Trans Québec & Maritimes Pipeline Inc.
Westcoast Energy Inc.

Group 1 Oil and Products

Cochin Pipe Lines Ltd.
Enbridge Pipelines Inc.
(formerly Interprovincial Pipe Line Ltd.)
Enbridge Pipelines (NW) Inc.
(formerly Interprovincial Pipe Line (NW) Ltd.)
Express Pipeline Ltd.
Trans Mountain Pipe Line Company Ltd.
Trans-Northern Pipelines Inc.

Group 2 Gas

AEC Suffield Gas Pipeline Inc.
Bellator Exploration Inc.
Blue Range Resource Corporation
Canadian Hunter Exploration Ltd.
Canadian-Montana Pipe Line Company
Canadian Natural Resources Ltd.
Canor Energy Ltd.
Centra Transmission Holdings Inc.
Champion Pipe Line Corporation Limited
Chauvco Resources Ltd
Chief Mountain Gas Co-op Ltd.
Consumers' Gas (Canada) Limited
Cube Energy Corp.
ELAN Energy Inc.
Fletcher Challenge Energy Canada Inc.
Forty Mile Gas Co-op Ltd.
Huntingdon International Pipeline Corporation
Husky Oil Operations Ltd.
Interenergy Sheffield Processing Company (Canada) Ltd.
Many Islands Pipe Lines (Canada) Limited
Mid-Continent Pipelines Limited
Minell Pipeline Ltd.
Mobil Oil Canada Ltd.
Murphy Oil Company Ltd.
(gas and oil pipelines)
Niagara Gas Transmission Limited
Northstar Energy Corporation
Novacorp International Pipelines
Novagas Canada Pipelines Ltd.
(formerly Novagas Clearinghouse Pipelines Ltd.)
Olympia Energy Inc.
Peace River Transmission Company Limited
Penn West Petroleum Ltd.
Petrorep Resources Ltd.
Poco Petroleums Ltd.
Portal Municipal Gas Company Canada Inc.
Quest Oil and Gas Ltd.

Remington Energy Ltd.
 Renaissance Energy Ltd. (gas and oil pipelines)
 Revenue Canada Customs and Excise
 Rigel Oil and Gas Ltd.
 SCL Québec Pipeline Inc.
 St. Clair Pipelines Ltd.
 Stampeder Exploration Ltd.
 Talisman Energy Inc.
 Tidal Resources Inc.
 Union Gas Limited
 Wascana Energy Inc.
 167496 Canada Ltd.
 177293 Canada Ltd.
 661151 Alberta Ltd.

Group 2 Oil and Products

Amoco Canada Petroleum Company Ltd.
 Aurora Pipe Line Company
 Dome Kerrobert Pipeline Ltd. and
 Pan Canadian Kerrobert Pipeline Ltd.
 Dome NGL Pipeline Ltd.
 Dome NGL Pipeline Ltd. and
 Amoco Canada Petroleum Company Ltd.
 Enbridge Pipelines (Westpur) Inc.
 (formerly Westspur Pipe Line Company Inc.)
 Ethane Shippers Joint Venture
 Federated Pipe Lines (Northern) Ltd.
 Genesis Pipeline Canada Ltd.
 Husky Oil Operations Ltd.
 Imperial Oil Resources Limited
 ISH Energy Ltd.
 Joint Ventures of the Bi-Provincial Upgrader
 Manito Pipelines Ltd.
 Montreal Pipe Line Limited
 Nevis Ltd.
 Northwest Transmission Company Limited
 Novacor Chemicals (Canada) Ltd.
 Petroleum Transmission Company
 Pioneer Natural Resources Canada Inc.
 Pouce Coupé, Pipe Line Ltd.
 PrimeWest Energy Inc.
 Rigel Oil and Gas Ltd.
 SCL Pipeline Inc.
 Sun-Canadian Pipe Line Company Limited
 Wascana Pipe Line Ltd.

Commodity Pipelines

E. B. Eddy Forest Products Ltd.
 Fraser Inc.
 Genesis Pipeline Canada Ltd.
 Penn West Petroleum Ltd.
 Souris Valley Pipeline Limited
 Stone Consolidated Corporation

Electric Power Utilities and Others

Alberta Power Limited and
 CU International Limited
 Aquila Canada Corp.
 British Columbia Hydro and Power Authority
 and British Columbia Power Exchange
 Canadian Niagara Power Company
 The Canadian Transit Company
 Chandler Energy Inc.
 Citizens Power Sales
 Cominco Ltd.
 Destec Power Services Inc.
 Detroit and Canada Tunnel Corporation
 Edmonton Power Authority
 Engage Energy Canada, L.P.
 Enron Capital and Trade Resources
 Canada Corporation
 Farms (including cottages and isolated loads)
 Fraser Inc.
 Hydro-Québec
 Inland Pacific Energy Services Ltd.
 Lac La Croix Power Authority
 James Maclaren Inc.
 Maine and New Brunswick Power
 Manitoba Hydro-Electric Board
 Montwegan International Resource Inc.
 New Brunswick Power
 Nova Scotia Power Inc.
 Ontario Hydro
 Saskatchewan Power Corporation
 Sonat Power Marketing Inc. and
 Sonat Power Marketing L.P.
 St. Clair Tunnel Corp.
 Stone-Consolidated Corporation
 Tractebel Energy Marketing Inc.
 TransAlta Utilities Corporation
 TransCanada Northridge Power Ltd.
 Utility-Trade Corp.
 West Kootenay Power Ltd.

Supplement V

Cooperation with Other Agencies

The Board cooperates with other agencies, wherever practical, to reduce regulatory overlap and provide more efficient regulatory services. In addition, the Board provides assistance to other countries who seek to benefit from the Board's long experience and success as a leading regulatory agency.

Natural Resources Canada (NRCan)

The Board has a Memorandum of Understanding (MOU) with NRCan to reduce duplication and increase cooperation between the agencies. This MOU covers items such as data collection, the enhancement of energy models and special studies.

Canadian Environmental Assessment Agency

The Board has been working with the Canadian Environmental Assessment Agency over the past year to develop a new process to reduce regulatory uncertainty for projects requiring a Comprehensive Study Report. Two pilot projects were undertaken using the new process, and further public consultation is expected in the coming year.

Northern Pipeline Agency (NPA)

The Board provides technical and administrative assistance to the NPA, which, pursuant to the *Northern Pipeline Act*, has primary responsibility for overseeing the planning and construction of the Canadian portion of the proposed Alaska Natural Gas Transportation System by Foothills Pipe Lines Ltd. Mr. Kenneth Vollman, Chairman, serves as Administrator and Designated Officer of the Agency.

Transportation Safety Board of Canada (TSB)

While the National Energy Board has exclusive responsibility for regulating the safety of oil and gas pipelines under federal jurisdiction, it shares the responsibility for investigating pipeline incidents with the TSB. The roles and responsibilities of each body with regard to pipeline accident investigations are outlined in a Memorandum of Understanding (MOU) between the two boards.

Yukon Territory Department of Economic Development (DED)

The Board continues to work with Yukon officials to facilitate the transfer of oil and gas regulatory responsibilities in accordance with the *Yukon Accord Implementation Agreement*. The Board provides expert technical advice to the DED.

Alberta Energy and Utilities Board (EUB)

The Board has an MOU with the EUB on Pipeline Incident Response. The agreement provides for mutual assistance and a faster and more effective response by both boards to pipeline incidents in Alberta.

During 1998, the Board continued its involvement in a Pipeline Task Force with the EUB. The purpose of this task force is to develop consistent and compatible regulatory requirements. It is expected that this process will result in more efficient use of organizational resources, leading to a reduced regulatory burden on both the pipeline industry and the public.

The Board and the EUB have developed a common reserves database for oil and gas reserves in Alberta. Both boards are

committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for cooperation.

Human Resources Development Canada (HRDC)

The Board has an MOU with HRDC to administer the Canada Labour Code for NEB-regulated facilities and activities and to coordinate these safety responsibilities under the COGO Act and the NEB Act.

Ontario Energy Board (OEB)

The Board is pursuing its Electronic Regulatory Filing (ERF) initiative as a joint venture with the OEB and twenty other key participants in the regulatory community. The ERF project will result in a fully functional electronic system for the creation, exchange, use and re-use of regulatory information. Cooperation with the OEB will ensure its applicability in both jurisdictions.

Saskatchewan Department of Energy and Mines (SEM)

The Board and the SEM have worked together on some resource issues, but a formal agreement has not been signed.

Nova Scotia and Newfoundland

The Board has an MOU with Natural Resources Canada by which the Board provides advice and assistance to NRCan and the provinces of Newfoundland and Nova Scotia in drafting federal and provincial version of regulations which pertain to the offshore areas under joint resource management accords.

British Columbia Ministry of Energy and Mines (MEM)

The Board and MEM have developed a common reserves database for oil and gas reserves in British Columbia. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for cooperation.

Cooperation with Other Countries

During 1998, the Board cooperated with several foreign countries by providing information on the Board's regulatory role and other energy-related matters. Consultations were held with the U.S. Federal Energy Regulatory Commission and the Comisión Reguladora de Energía of Mexico, as well as with visiting officials from Australia, China, Columbia, England, Japan, Peru and Russia.

The Board also participated in a World Bank seminar on regulation and on the Energy Regulators Forum within the Asia Pacific Economic Cooperation initiative, comprised of 18 member countries on the Pacific Rim dedicated to improving economic ties.

Supplement VI

List of Appendices

The following Statistical Reports are published separately as Appendices to the Annual Report. Electronic copies can be found on the Board's web site and print versions are available from our Publications Office.

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- A1 Crude Oil and Equivalent Supply and Disposition
- A2 Estimated Established Reserves of Crude Oil and Bitumen - December 1997
- A3 Natural Gas Supply and Disposition
- A4 Estimated Established Reserves of Marketable Natural Gas - December 1997
- A5 Natural Gas Liquids Supply and Disposition
- A6 Geophysical Activity
- A7 Exploration and Development Expenditures
- A8 Sales of Exploration Rights in Western Canada
- A9 Sales of Exploration Rights in Frontier Regions
- A10 Electricity Generation and Disposition

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- B1 Certificates Issued During 1998 Approving the Construction of New Oil Pipeline Facilities Exceeding 40 Kilometres in Length
- B2 Orders Issued During 1998 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length
- B3 Exports of Canadian Crude Oil and Equivalent - 1997 and 1998
- B4 Exports of Canadian Crude Oil and Equivalent - 1994-98
- B5 Exports of Petroleum Products by Month - 1998
- B6 Exports of Petroleum Products by Company - 1997 and 1998

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- C1 Certificates Issued During 1998 Approving the Construction of New Gas Pipelines Exceeding 40 Kilometres in Length

- C2 Orders Issued During 1998 Approving Gas Pipeline Construction not Exceeding 40 Kilometres in Length
- C3 Licences and Long-Term Orders to Export Natural Gas as at 31 December 1998
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- C5 Natural Gas Exports by Export Point, 1994-98
- C6 Total Net Exports of Propanes and Butanes 1997-98

Appendix D

- D1 Certificates Issued During 1998 Approving New Commodity Pipeline Facilities Exceeding 40 Kilometres in Length.

Appendix E

- E1 Financial Information - Group 1 Oil Pipeline Companies with Multi-year Incentive Toll Agreements
- E2 Financial Information - Group 1 Oil Pipelines with Tolls based on Cost of Service
- E3 Financial Information - Group 1 Gas Pipeline Companies

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- F1 Certificates and Permits Issued During 1998 for International Power Lines
- F2 Amending Orders Issued During 1998 for International Power Lines
- F3 Licences Issued During 1998 for the Export of Electricity
- F4 Permits and Orders Issued During 1998 for the Export of Electricity
- F5 Electricity Exports 1998
- F6 Electricity Trade Between Canada and the United States (by Province)
- F7 Electricity Trade between Canada and the United State (by American Region/State)

Supplement VII

Metric Conversion Table

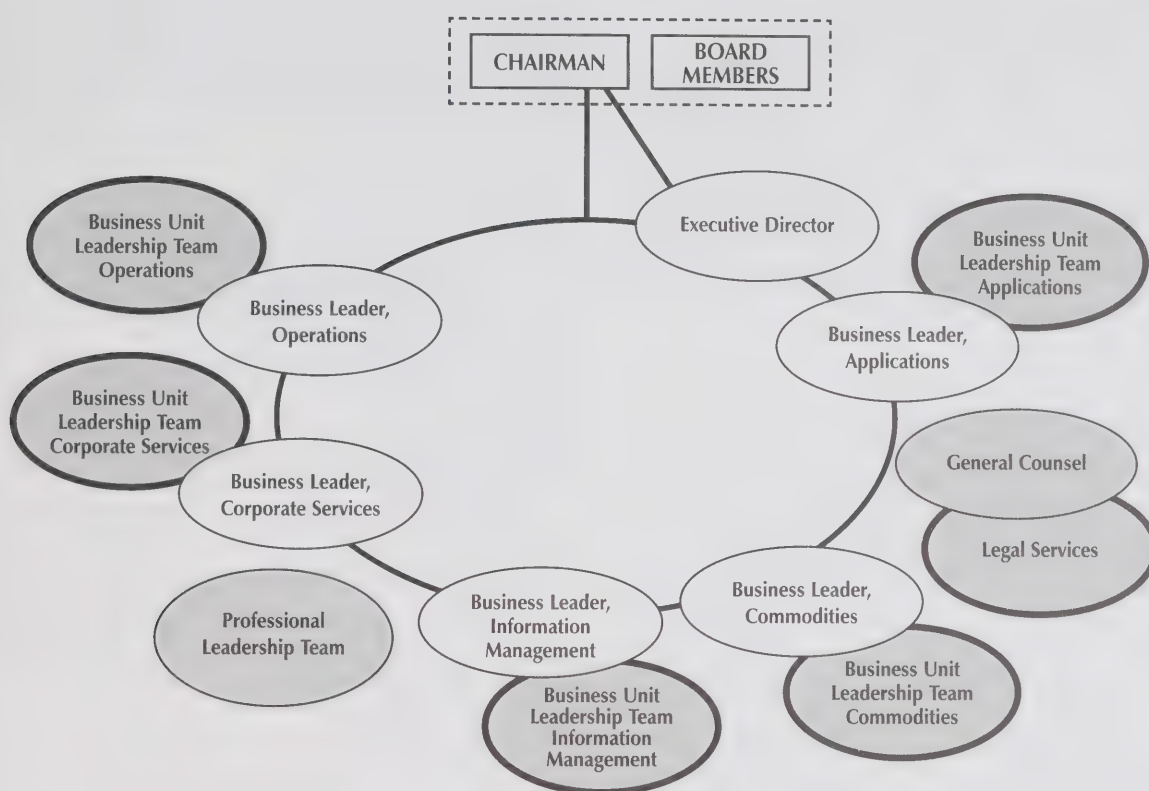
The National Energy Board uses the International System of Units. The energy units most commonly referred to in this report are the gigajoule and the petajoule. Combustion of a 30-litre gasoline tank expends approximately one gigajoule of energy. A petajoule is one million gigajoules. On average, Canada consumes about one petajoule of energy for all uses (heat, light and transportation) every 50 minutes.

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

Approximate Conversion Factor

metre	=	3.28 feet
kilometre	=	0.62 mile
hectare	=	2.47 acres
cubic metre of oil	=	6.3 barrels
cubic metre of natural gas	=	35.3 cubic feet
gigajoule	=	0.95 thousand cubic feet of natural gas at 1000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
gigajoule	=	10^9 joules
petajoule	=	10^{15} joules
gigawatt hour	=	10^6 kilowatt hour
terawatt hour	=	10^9 kilowatt hour

NEB Organization



Senior Board Staff

Gaétan Caron	Executive Director	Sylvia Farrant	Business Leader, Corporate Services
Judith Hanebury	General Counsel	Michel Mantha	Secretary of the Board
Brenda Kenny	Business Leader, Applications	Glenn Booth	Professional Leader, Economics
Terrance Rochefort	Business Leader, Commodities	Bonnie Gray	Professional Leader, Environment
John McCarthy	Business Leader, Operations	Frank Gareau	Professional Leader, Engineering
Scott Richardson	Business Leader, Information Management		

Business Unit Responsibilities

Applications

The Applications Business Unit is responsible for the processing and assessment of regulatory applications submitted under the NEB Act. These fall primarily under Parts III, IV and VI of the Act, corresponding to facilities, tolls and export applications. The Applications Unit is also responsible for the financial surveillance and financial audits of NEB-regulated pipelines.

Commodities

The Commodities Business Unit is responsible for assisting the Board in fulfilling its mandate through energy industry and marketplace surveillance, and the updating of guidelines and regulations relating to energy exports as prescribed by Part VI of the NEB Act. It is also responsible for the disposition of applications for short-term exports of gas, oil and NGLs, imports of natural gas, and the disposition of applications concerning electrical exports and international power lines.

Operations

The Operations Business Unit is accountable for safety and environmental matters pertaining to facilities under the NEB Act, the COGO Act and the CPR Act. It conducts safety and environmental inspections, audits, and accident investigations; monitors emergency response procedures; regulates the development of hydrocarbon resources in non-accord Frontier Lands; and develops regulations and guidelines with respect to the same.

Information Management

The Information Management Business Unit is responsible for developing and implementing an information management strategy for the Board that enhances its ability to provide information required by external stakeholders.

Corporate Services

The Corporate Services Business Unit is responsible for providing those services necessary to assist the Board in its management of human, material and financial resources.

Board Members

1. Kenneth W. Vollman ^(a)	Chairman
2. Anita Côté-Verhaaf	Member
3. Judith Snider	Member
4. Rowland J. Harrison	Member
5. Diana Valiela	Member
6. John S. Bulger ^(b)	Member
7. Robert Fournier	Temporary Member
8. Cecil Mervin Ozirny	Temporary Member
9. Gaétan Caron	Temporary Member
10. Guy Delisle ^(c)	Temporary Member
11. Paul Trudel ^(c)	Temporary Member

a) On 15 July, Kenneth Vollman was appointed Chairman.

b) On 8 October, John S. Bulger was appointed Member for a term of seven years.

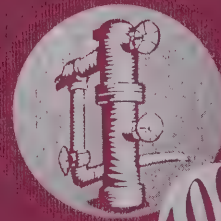
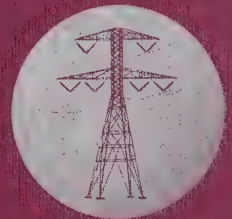
c) On 15 July Guy Delisle and Paul Trudel were appointed temporary Board Members for a term of 60 days.

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National Energy
Board



Office national
de l'énergie



1999 Annual Report

The cover of the 1999 Annual Report celebrates the 40th anniversary of the establishment of the National Energy Board. From its formation in 1959, through four decades of change in Canadian energy and a move from Ottawa to Calgary, the Board has made decisions that provide real benefits to Canadians.

Throughout its history, the National Energy Board has played many roles. Initially, it acted as a promoter of Canadian energy in new markets. Later, it played a key role as part of the prescriptive federal involvement in the energy sector. Most recently, the Board has worked in partnership with the energy industry and consumers to move away from adjudication towards more negotiation.

The Board has been involved in a number of major turning points in the development of the Canadian energy industry. Examples include the first pipeline toll hearing in 1971, approval of the northern pipeline in 1977, issuing guidelines for negotiated toll settlement in 1988, and the opening of a new supply basin on the east coast in 1997. These milestones serve as reminders of how the National Energy Board has risen to the challenges presented it in the past and as models for meeting challenges in the new millennium.

Cover design by Donna Dunn.



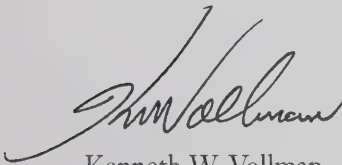
17 March 2000

The Honourable Ralph Goodale, P.C., M.P.
Minister of Natural Resources Canada
580 Booth Street, 21st Floor
Ottawa, Ontario
K1A 0E4

Dear Minister:

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 1999, in accordance with the provisions of Section 133 of the *National Energy Board Act*, R.S.C 1985, c. N-7.

Yours truly,



Kenneth W. Vollman
Chairman



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as represented by the National Energy Board

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Purpose, Vision and Goals

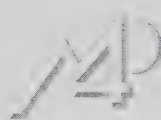
The National Energy Board's **purpose** is to promote safety, environmental protection and economic efficiency in the Canadian public interest while respecting individuals' rights within the mandate set by Parliament in the regulation of pipelines, energy development and trade.

The Board's **vision** is to be a respected leader in safety, environmental and economic regulation.

In its strategic plan the Board has developed **four corporate goals** to help it meet the challenges it faces in a dynamic energy market and ever-changing regulatory landscape:

- NEB-regulated facilities are safe and perceived to be safe.
- NEB-regulated facilities are built and operated in a manner that protects the environment and respects individuals' rights.
- Canadians derive the benefits of economic efficiency.
- The NEB meets the evolving needs of the public to engage in NEB matters.

Chairman's Letter



The National Energy Board (the NEB or the Board) celebrated its 40th anniversary in 1999. At a commemorative event in November, the Board recalled the contributions of its past chairmen, members and staff. However, while the Board remembered its past, 1999 was primarily a year of renewal and of preparing for the future.

The Board's hearing workload fell from a hectic 139 days and 121 days in 1997 and 1998 respectively to 31 days last year. This provided the Board with the opportunity to attend to a number of regulatory development matters which were necessarily deferred during previous years.

In 1999, the Board issued approximately 1 100 written decisions, only 23 of which were the outcomes of oral hearings. The rest were dealt with through written procedures. To improve its processing of these routine applications, the Board initiated projects to measure and reduce cycle times. The Board commonly processes gas export orders within 48 hours and has reduced the processing time for electricity permits to approximately 36 days. The Board continues to seek process improvements that will result in more efficient and effective review of smaller scale applications.

Although the hearing workload dropped off last year, the extensive hearings in the previous two years resulted in a heavy pipeline construction schedule in 1999. This required a significant increase in the Board's presence in the field, inspecting construction sites for compliance with safety and environmental requirements. The Board's staff inspected 80 construction sites, 35 percent more than in 1998.

The Board published three major energy market studies in 1999 including the *Canadian Energy Supply and Demand to 2025*, a comprehensive "all energy" market analysis and forecast which serves as a standard of reference on Canadian energy issues and trends. Energy market studies are essential to the Board's understanding of North American energy markets.

The Board issued the new *Onshore Pipeline Regulations*, 1999, and companion Guidance Notes. The new regulations represent an evolution towards goal-orientation in the Board's approach to environmental and safety regulation. This approach sets out the goals of the regulations and provides companies with some flexibility to develop and improve appropriate procedures to ensure these goals are met. To help achieve its environment and public engagement goals, the Board developed a new environmental policy and initiated more effective contact with its stakeholders.

The year was also one of significant change in the composition of the Board. Two Board Members, Mrs. Anita Côté-Verhaaf and Dr. Diana Valiela, left the Board in March and May respectively. In July, Ms. Judith A. Snider was appointed Vice-Chairman of the Board and Ms. Elizabeth Quarshie, Ms. Deborah Emes, and Dr. Carmen Dybwad, were appointed as new Board Members. Ms. Snider brings extensive experience in energy and regulatory law from both within the NEB and from industry to the position of Vice-Chairman. Ms. Quarshie, Ms. Emes, and Dr. Dybwad, bring a wealth of experience in environmental and economic issues. The strengths brought by the new Board Members will help the Board meet the challenges of the new millennium.

The NEB's 40th year was one of renewal. I am confident that the initiatives taken through the year will ensure that the NEB is well positioned to make decisions that benefit Canada and Canadians.

Kenneth W. Vollman



Regulatory Highlights

Regulatory Landscape

Developments in the energy industry in 1999 emphasized the national scope of the NEB's responsibilities. Construction of Maritimes and Northeast Pipeline Management's (M&NP) system in Nova Scotia and New Brunswick was completed, enabling delivery of natural gas to these Maritime provinces. The development of the domestic natural gas industry in the Maritimes is progressing much faster than had been anticipated at the time the M&NP project commenced.

While development proceeded on the East Coast, exploration and production activity was heating up in northern Canada.

After a decade of relatively low natural gas prices in western Canada, expansions of the TransCanada PipeLines Limited (TransCanada) and Foothills Pipe Lines Ltd. (Foothills) systems reconnected prices in Western Canada Sedimentary Basin

(WCSB) to those elsewhere in the North American gas market, resulting in significant wellhead price increases. These price increases acted as signals to producing companies to develop incremental gas supplies. However, after a decade of rapid growth in production from 1987-1997, it appears that the ability of the WCSB to meet rising demand is being severely tested. Accordingly, exploration and production is extending north of the 60th parallel into the southern Yukon and southern Northwest Territories.

In addition to an incremental push to the north, the industry is seriously discussing the possibility of constructing a major pipeline to link far northern gas fields in either or both the Mackenzie Delta area and Alaska's North Slope with the continental gas transportation system.

At the same time that the natural gas was extending its reach across the country, fundamental changes have been occurring in the traditional markets. Construction of Alliance Pipeline Ltd.'s (Alliance) system, which will deliver natural gas from northeast B.C. and Alberta to markets in the Chicago area, has proceeded on schedule. In addition, the Board approved construction of the Vector project, which will provide a new link between the pipeline grid at Chicago and southern Ontario. Once they are in service, the Alliance-Vector link will provide for the first time direct competition to TransCanada for the transportation of natural gas from western Canada to central Canada. Alliance will also provide com-

petition to Foothills for the delivery of natural gas to U.S. mid-west markets.

The introduction of some competition into the gas transmission industry is posing new challenges for TransCanada and for the NEB. In 1999 a number of shippers did not renew



their long-term transportation contracts on TransCanada, thereby leaving the company with less than all of its capacity contracted. One consequence of this decontracting was that pipeline rates have increased. The cost of this increase has already been passed on to natural gas buyers in central Canada. It is clear that changing market and business realities in the industry may require the Board to adopt flexible regulatory approaches.

The expectations of the Canadian public are changing as well. Landowners are looking to the Board to assist them in disputes with pipeline companies. Many Canadians participate in the review process for new pipeline projects with increasing interest in environmental and safety issues raised by these projects. This growing desire by the public to play a direct role in pipeline regulation challenges the Board to

ensure that it respects individual rights while making findings in the public interest.

In summary, the growth of the gas industry, ongoing construction of pipelines, and heightened expectations of Canadians to protect all aspects of the public interest is requiring the Board to closely monitor the interests of affected stakeholders across the nation. The Board is increasing its efforts to engage its stakeholders to ensure that it fully understands and appreciates the views of all parties who are potentially affected by NEB decisions.

Northern Canada

In northern Canada, oil and gas activity is accelerating. Following successful gas discoveries in the Fort Liard area of the Northwest Territories, Shiha Energy Transmission Ltd. (owned by Paramount Resources Ltd. and Berkley Petroleum Corp.) submitted an application to the Board to construct a pipeline with a capacity of 3.0 million cubic metres of natural gas per day. The natural gas will be delivered from a facility near Fort Liard to the Maxhamish Gas Plant in northeastern B.C. and eventually into the Westcoast Energy Inc. (Westcoast) system.

The Board is responsible under the *Canada Petroleum Resources Act* (CPR Act), for approving oil and natural gas discoveries in frontier lands, which are lands north of the 60th parallel and in non-accord offshore areas. The Board received applications for three significant discoveries during 1999. Further north, the Board witnessed renewed interest by the industry in the development of natural gas resources at Prudhoe Bay, Alaska and in the Mackenzie Delta region. This could potentially result in a pipeline facilities application to the Board for facilities that would be required in Canada.

Western Canada

In March 1999, the Board heard and approved a request by BC Gas Utility Ltd. (BC Gas) for a new receipt point on the Westcoast pipeline system at Kingsvale in southern British Columbia. BC Gas applied to the Board after being refused

access by Westcoast for volumes that would be delivered via BC Gas' proposed Southern Crossing project. In its decision, the Board directed Westcoast to establish a new receipt point and to receive, transport and deliver any gas delivered at Kingsvale to the Huntingdon Delivery Area near the Canada-U.S. border. The Board also decided that the appropriate toll for firm service from Kingsvale to Huntingdon will be the Zone 4 toll from Westcoast's Station 2 located in northern B.C. to Huntingdon.

The Board examined access by natural gas liquids (NGL) shippers to Canadian pipeline systems. In 1997, the Board directed Enbridge Pipelines Inc. (Enbridge), then called Interprovincial Pipe Line Inc., to develop a toll methodology application for facilities that would provide open access service for NGL shippers on the Enbridge pipeline. In March 1999, Enbridge filed an application for approval of a stand-alone tolling methodology for storage and injection facilities. Subject to the terms of an underpinning agreement, Amoco Canada Limited and Shell Canada Petroleum Company Ltd. would sell the aforementioned facilities to Enbridge and financially backstop the project for a period of 15 years.

In October 1999, the Board held a technical conference to allow parties an opportunity to discuss issues related to the transportation of NGL on the Enbridge pipeline system. Following the conference, the Board directed Enbridge to conduct an open season for its proposal. Enbridge commenced the open season on 14 December 1999 and results will be reported in early 2000.

Alliance applied to the Board for approval of the Canadian portion of its detailed route. As required by the *National Energy Board Act* (NEB Act), Alliance served notices on owners of lands proposed to be acquired and published notices in publications serving the areas in which the lands are situated.

The Board received 48 written statements of opposition to the detailed route out of approximately 3 300 landowners affected by Alliance. Of these, 15 cases were set down for public hearings. The hearings held in Regina, Saskatchewan; Edmonton, Alberta; and Grande Prairie, Alberta; between

April and June of 1999. One case was withdrawn just before the hearing. The Board reserved its decision on another case pending the filing of additional information; however the pipeline was re-routed, bypassing this tract of land. Of the remaining 13 cases, the Board denied Alliance's proposed detailed route in three cases and approved the detailed route in ten cases. Construction of the Alliance pipeline began in January 1999 and is expected to be completed in late 2000.

In late 1999 Souris Valley Pipeline Limited (Souris Valley) completed construction of the first commodity pipeline approved by the Board. Souris Valley expects to commence operation of its pipeline in the fall of 2000. The pipeline will carry carbon dioxide from North Dakota to the Weyburn oil field near Goodwater, Saskatchewan, extending the life of the existing oil field by an estimated 25 years.

Central Canada

On 31 March 1999, the Board approved an application by Vector Pipeline Limited Partnership (Vector) to construct and operate a natural gas pipeline in southwestern Ontario. The Vector project is part of a new international pipeline project to provide hub-to-hub natural gas transmission service between Joliet, near Chicago, Illinois, and Dawn, Ontario. The total project will consist of approximately 552 kilometres of pipeline.

In Canada, Vector plans to construct and operate approximately 24 kilometres of the pipeline, extending from the international boundary in the St. Clair River near Sarnia, Ontario to Dawn. The initial capacity of the pipeline will be 28.3 million cubic metres per day. The estimated cost of the Canadian portion of the project is \$35.4 million. The planned in-service date is October 2000 with a proposed construction start date in February 2000.

St. Clair Pipelines (1996) Ltd. (St. Clair) and TransCanada have applied for a new gas pipeline to connect the Dawn hub with markets in the northeastern United States. St. Clair's proposed Millennium West Pipeline would extend

74 kilometres from Sarnia, Ontario to the shore of Lake Erie near Patrick Point, Ontario. At this location, the Millennium West Pipeline would interconnect with TransCanada's proposed Lake Erie Crossing Pipeline which would then extend another 97 kilometres across Lake Erie. Collectively, these two pipeline proposals are known as the Canadian Millennium Pipeline Project (Millennium) and would connect with the proposed U.S. Millennium Pipeline Company, L.P. facilities at the international border beneath the waters of Lake Erie. The initial capacity of the Millennium facilities would be 19.83 million cubic metres per day.

To coordinate the environmental assessment required under the *Canadian Environmental Assessment Act* (CEA Act) and the NEB Act, and to avoid unnecessary duplication of regulatory processes, the hearing will be conducted by a Joint Review Panel (Panel), established by an Agreement between the NEB and the Minister of the Environment dated 15 November 1999. The Panel will act as a joint review panel making recommendations under the CEA Act and as a panel under the NEB Act to hear all matters relevant to the applications.

Eastern Canada

Construction of the first significant offshore pipeline approved under the NEB Act was completed, connecting new offshore production facilities near Sable Island to a gas processing plant near Goldboro, Nova Scotia. From Goldboro, the M&NP pipeline system will carry natural gas to markets in Nova Scotia, New Brunswick and the New England states. The line was opened for service in December 1999. In 1999, M&NP also completed construction of a lateral pipeline to carry natural gas from Goldboro to Cape Breton Island.

The Board also heard and approved two applications from M&NP to construct natural gas lateral pipelines to serve markets within Nova Scotia and New Brunswick. The Halifax Lateral pipeline will connect the M&NP mainline in Nova Scotia near Stellarton to the Halifax area. The Saint John Lateral pipeline will connect

Saint John and the Lake Utopia area to the M&NP mainline in New Brunswick. Detailed route hearings in respect of these laterals may be required early in 2000 with construction to be completed by November 2000.

Incentive Toll Agreements

In recent years, the Board has moved towards a light-handed regulatory approach to tolls and has encouraged companies to negotiate settlements with shippers. Since 1995, a number of companies have succeeded in negotiating multi-year toll settlements including incentive features. During 1999, some of these settlements came up for renewal.

Enbridge's first multi-year incentive toll settlement expired on 31 December 1999. In May 1999, Enbridge advised the Board that it had signed a memorandum of agreement with the Canadian Association of Petroleum Producers (CAPP) concerning a five-year extension of the current incentive toll settlement. Since negotiations on the new agreement were still ongoing when the current agreement expired, the Board made Enbridge's current tolls interim as of 1 January 2000. Enbridge expects to file a finalized 2000 - 2004 Incentive Toll Settlement during the first quarter of 2000. In late 1999, the Board completed the field work for a financial regulatory audit of Enbridge for the years 1994 to 1998. The audit report is expected to be released in early 2000.

For the past four years, TransCanada has used its Incentive Recovery and Revenue Sharing Settlement to set its revenue requirement for toll making. This settlement was negotiated between TransCanada, its shippers and other interested parties. Attempts to renegotiate or extend this agreement in 1999 were unsuccessful and the agreement ended on 31 December 1999. On 17 December 1999, TransCanada submitted a toll application to cover 2000. Through the end of the year, TransCanada

continued negotiations with its shippers and other interested parties with respect to a New Services and Pricing Framework to be applicable from 2001 onward.

On 29 October 1999, TransCanada filed an application to amend some of the terms under which interruptible transportation and short term firm transportation services are offered. This application was set down for an oral hearing to commence 18 January 2000.

Energy Market Analysis

The NEB monitors energy supply, demand and markets on an ongoing basis and publishes its findings in various reports. The Board published its long-term outlook, *Canadian Energy Supply and Demand to 2025*, in June 1999. This report benefited from two rounds of public consultation with interested parties across the country, the first on key assumptions underpinning the analysis and the second on preliminary results. In September 1999, the Board published an Energy Market Assessment, entitled *Short-term Natural Gas Deliverability from the Western Canada Sedimentary Basin, 1998-2001*.

Corporate Projects

During the second half of the 1990s, the Board spent considerable time and resources dealing with new pipeline facilities applications. In 1999, the decrease in new applications allowed the NEB to focus on preparing for the challenges it will face in the new millennium. A number of projects were initiated to assist the Board in achieving its goals. These projects focussed on clarifying



requirements, streamlining processes and gathering information.

The Board began examining the current non-hearing facilities application process to improve regulatory efficiency. The specific objectives are to reduce internal cycle times, to clarify the application process, and to enhance the quality and consistency of analysis while promoting safety, environmental protection, and economic efficiency. To date, the Board has initiated a cycle-time measurement process for applications made under section 58 of the NEB Act, identified concerns with its current internal procedures and formulated strategies to improve and streamline the processing of these applications. Covering a wide range of applications, from routine to very complex, the overall average cycle time for section 58 applications in 1999 was 42 working days. Measurement and tracking will be further refined in 2000.

A project was initiated to examine the Board's processes and procedures to ensure that respect for individuals' rights was maintained or enhanced on an ongoing basis. The project looked at means of facilitating individual participation in Board processes and of ensuring that pipeline companies are increasingly held responsible for landowner consultation. In order to identify potential concerns with how the Board deals with landowners, the Board's processes were compared to those of other jurisdictions such as the provinces and the U.S. Federal Energy Regulatory Commission (FERC). Input from landowners about those processes was considered as well.

During 1999, the Board piloted a new environmental assessment process for new pipeline facilities under the CEA Act. This new process has the comprehensive study completed by the project proponent before the hearing process starts. The new environmental assessment process was used on a new pipeline project, M&NP's Saint John Lateral. The result was a much shorter hearing with the majority of the environmental concerns having been dealt with before the hearing.

The Board undertook the process of developing an Environmental Management Program (EMP) which will provide a framework to enable the NEB to manage its environmental agenda and to document, evaluate and communicate its environmental performance. As a starting point in developing the EMP, the NEB has defined its environmental policy. The environmental policy sets the overall direction and aligns the NEB's management and staff with common goals and principles of operation. During the next three years, the NEB will continue to develop the EMP by formulating a plan to apply its environmental policy followed by implementing, monitoring, measuring, reviewing and improving the EMP.

The Board initiated a project to develop a greater understanding of the business environment within which toll negotiations take place and the Board's role in shaping that environment. In addition to conducting research, the Board made a concerted effort to engage external stakeholders with the purpose of more fully understanding the business environment and the impact of the Board's decisions on that environment.

Energy Overview

As part of its efforts to inform the public on energy market trends, the Board monitors and reports on developments on an ongoing basis. The Board has statutory reporting requirements with respect to energy exports and imports, and prepares reports on current and future energy market developments in Canada. These reports, called *Energy Market Assessments* (EMAs), include a periodic report on the long-term energy outlook for Canada. The provision and interpretation of energy market information helps the Board achieve its goal that Canadians derive the benefits of economic efficiency. This overview provides a summary of Canadian energy supply, consumption, production, prices and trade during the last five years, with an emphasis on 1999 data and activities.¹ For a more detailed overview and comprehensive long-term outlook, refer to the Board's June 1999 publication *Canadian Energy Supply and Demand to 2025*.

Growth in Canadian energy production in 1999 was moderated by a decline in crude oil production. Overall energy consumption increased, but warmer than normal weather caused heating requirements to decline from 1998, partially offsetting the growth in transportation and other energy requirements. Net energy export revenue (exports less imports) increased by 21 percent to \$19.3 billion in 1999 with natural gas and oil leading the way.

As 1999 progressed, oil prices recovered dramatically from the low levels experienced through most of 1998 and early 1999. The price for the West Texas Intermediate (WTI) benchmark crude averaged US\$19.25 per barrel, up 35 percent from 1998. North American natural gas prices also increased over 1998. Canadian producer prices increased substantially more than U.S. prices due to tightening gas balances and the effect of expanded pipeline capacity exiting Western Canada. Prices received by Canadian producers remain lower than their U.S. counterparts due to higher transportation costs to major markets.

The recovery in oil prices was largely a result of the Organization of Petroleum Exporting Countries' (OPEC) discipline in complying with production cutbacks. Meanwhile, production from non-OPEC countries stabilized, in part due to operational constraints, but also due to cooperation with OPEC. On the demand side, economic recovery in Asia combined with strong economic growth in North America and Europe brought continued growth in oil demand. In Canada, conventional light and heavy crude oil production declined by nine percent, partly due to natural decline and partly due to the fall-out from low oil prices in 1998 and early 1999. Along with lower *in situ* bitumen production, these reductions more than offset higher production from Hibernia and oil sands mining projects.



¹ Where available, information has been provided using 1999 data. In some cases, for example reserves, 1998 data is provided.

Oil and gas exploration and development activity, as measured by wells drilled and sales of exploration rights, increased in 1999. However, there was a pronounced shift by Western Canadian producers towards gas drilling, and the number of oil wells drilled actually declined. This trend reflected increased gas demand resulting from pipeline expansions, improving gas prices, and the impact of low oil prices in 1998 on industry expenditures in 1999. Interest in Canada's frontiers accelerated as evidenced by work commitments made on the East Coast and in the Mackenzie Delta area.

Natural gas production increased by about two percent over 1998 levels as a result of increased exports and relatively stable domestic demand. Although the data is not yet available, the Board does not expect that natural gas reserves additions completely replaced production in 1999.

Canadian electricity exports increased over 1998, although they were below the near record levels experienced from 1994 to 1997. Imports were small in comparison to exports. Exports continued to be needed to meet increased domestic requirements that were caused in part by the temporary removal from service of some of Ontario's nuclear generation capacity.

For greater detail, statistical appendices have been prepared as a companion document to the *Annual Report* with details on crude oil, natural gas, and electricity supply and disposition, industry activity, facility certificates, orders and licences for exports, and pipeline financial information (see List of Appendices in Supplement VII).

Energy and the Canadian Economy

Canada's large reserves of energy resources, and increasing production of this wealth, have contributed to the energy sector's important role in the Canadian economy. In 1999, the energy industry accounted for approximately six percent of total Gross Domestic Product, about eight percent of total merchandise exports, and employed about 281 000 Canadians in upstream and downstream operations.

Since 1995, Canadian energy production has expanded by about six percent. Petroleum production has increased by nine percent, while natural gas production has risen by 11 percent. Nuclear power production has declined 24 percent. In 1999, natural gas and petroleum accounted for 72 percent of total energy production in Canada (Table 1). Higher production levels of both petroleum and natural gas have been stimulated by sustained growth in the North American economy, pipeline expansions, increases in natural gas prices, technological improvements, and increased competition in energy markets.

Canada's energy consumption is high relative to other developed countries. Based on information from the International Energy Agency, per capita energy consumption is about the same as in the United States, but 80 to 180 percent higher than the other G-7 members. Canada's high energy consumption results from its cold climate, its energy intensive resource-based economy and long distances between population centres. Between 1995 and 1999, domestic energy demand increased by about two percent. Space heating (18 percent) and transportation (21 percent) requirements accounted for about 39 percent of total energy consumption (Table 2).

Over the 1995 to 1999 period, Canada had steady and substantial energy trade surpluses. The average net revenue was about \$18 billion per year (Figure 1). In 1999, total gross export earnings

Table 1
Domestic Energy Production by
Energy Source

(Petajoules)

	1995	1996	1997	1998	1999 ^{a)}
Petroleum	5 026	5 039	5 446	5 634	5 480
Natural Gas	5 648	5 852	5 953	6 135	6 242
Hydroelectricity	1 198	1 268	1 250	1 183	1 212
Nuclear	1 067	1 012	900	780	815
Coal	1 801	1 832	1 897	1 801	1 834
Renewable and Other	554	552	555	569	592
Total	15 294	15 555	16 001	16 102	16 175

a) Estimates

for natural gas, petroleum, electricity and coal had a value of about \$29.8 billion resulting in an energy trade surplus of \$19.3 billion.

Petroleum export revenues increased to an estimated \$14.9 billion in 1999, somewhat below the

peak of \$17.9 billion in 1997. Spending on petroleum imports was about \$9 billion, leaving Canada with a trade surplus in petroleum of \$5.8 billion, up from \$4.4 billion in 1998.

Natural gas export revenues have increased continually since 1995, reaching \$10.9 billion in 1999. Because of negligible imports, natural gas contributed \$10.8 billion to the 1999 energy trade surplus.

Table 2
Domestic Energy Consumption

(Petajoules)

	1995	1996	1997	1998	1999 ^(a)
Space Heating	1 900	1 985	1 973	1 869	1 870
Transportation	2 065	2 125	2 183	2 244	2 304
Other Uses ^(b)	3 371	3 479	3 493	3 428	3 462
Non-Energy ^(c)	759	800	833	777	787
Electricity Generation ^(d)	2 220	2 189	2 142	2 129	2 102
Total	10 315	10 578	10 624	10 447	10 525

a) Estimates

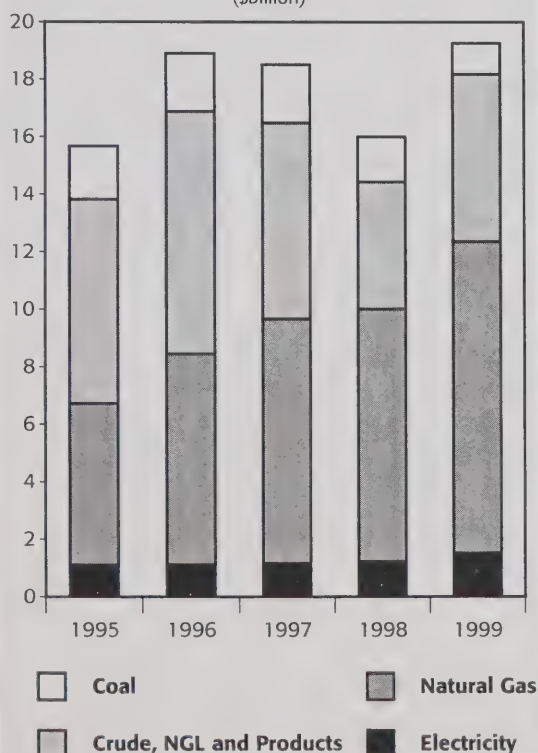
b) Includes energy used for space cooling and ventilation as well as a variety of uses in the industrial sector

c) Includes energy used for petrochemical feedstocks, asphalt, lubricants, etc.

d) Includes producer consumption and losses as well as nuclear energy conversion requirements.

Figure 1
Net Energy Export Revenues

(\$billion)



Crude Oil and Natural Gas Liquids

International Markets

The collapse of world oil prices that occurred in 1998 carried through to the first quarter of 1999. Prices reached a low of near US\$11 per barrel (WTI) on February 16. Prices began to recover following the March OPEC meeting at The Hague where members agreed to reduce production targets by 2.1 million barrels per day until March 2000. This agreement was in addition to the reduction of 2.6 million barrels per day previously agreed to by OPEC in July of 1998 and also included the participation of non-OPEC countries, including Mexico, Norway and Oman. At the end of 1999, compliance with the cutbacks by the participating countries was reported to be over 90 percent.

The recovery of the Asian economies in 1999 was largely responsible for an increase in the demand for crude oil in the last half of the year and resulted in crude oil demand outpacing production (Figure 2). At year-end, crude oil inventories were at their lowest levels in a decade. These events supported higher oil prices. WTI at Cushing, Oklahoma, reached US\$24 per barrel by mid-September and US\$26 per barrel by year-end. Similarly, the price of Brent (U.K.) crude reached US\$22 by mid-September and US\$25 by year-end.

Production and Reserves Replacement

Canadian production of crude oil and equivalent, projected to year-end, averaged approximately 332 400 cubic metres (2.1 million barrels) per day in 1999, down more than four percent from the 1998 level. The decline reflects reduced *in situ* bitumen and conventional light and heavy crude oil production from Western Canada (Table 3).

Table 3
Canadian Production of Crude Oil
and Natural Gas Liquids

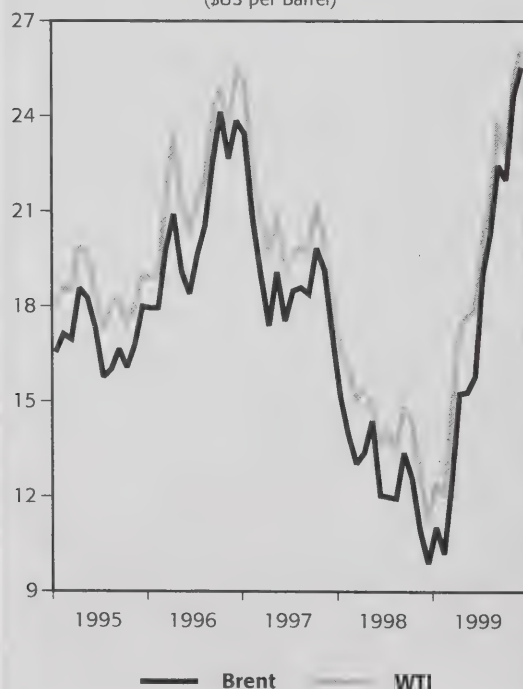
(thousand cubic metres per day)

	1995	1996	1997	1998	1999 ^(a)
Conventional Light (East)	4.3	3.7	2.7	13.6	17.5
Conventional Light (West)	140.8	136.3	132.4	126.9	112.8
Synthetic	44.5	44.1	45.5	48.2	52.0
Pentanes Plus	25	26.4	27.3	27.5	27.0
Total Light	214.6	210.5	207.9	216.2	209.3
Conventional Heavy	73.4	82.2	89.6	86.5	81.2
<i>In-situ</i> Bitumen	23.7	26.1	37.6	45.1	41.9
Total Heavy	97.1	108.3	127.2	131.6	123.1
Total Crude Oil and Equivalent	311.7	318.8	335.1	347.8	332.4
Natural Gas Liquids	86.3	91.2	93.5	94.3	97.6

a) Estimates

Figure 2
WTI and Brent Oil Prices

(\$US per Barrel)



Low oil prices in the first quarter of 1999 resulted in reduced drilling and well workover activity throughout the year. These reductions more than offset the growth from Hibernia and oil sands mining projects. Overall, this was the first annual decline in Canadian production since 1991 and the largest volume decrease since 1981.

In Eastern Canada, production at Hibernia, offshore Newfoundland, added 15 840 cubic metres (99 800 barrels) per day of conventional light crude oil to Canadian supply, an increase of over 50 percent from 1998. The Cohasset-Panuke oil fields, offshore Nova Scotia, discontinued production on 16 December 1999 and the project sponsors have applied for abandonment. Production from these fields averaged about 1 000 cubic metres (6 300 barrels) per day in 1999. The fields were initially expected to produce about 5.5 million cubic metres (34.7 million barrels) but, with additional drilling and the application of new technology the fields produced almost seven million cubic metres (44.1 million barrels) of light sweet crude oil.

In Western Canada, crude oil and equivalent supply decreased by almost six percent in 1999. Conventional light crude oil declined by over 11 percent, while conventional heavy crude oil and *in situ* bitumen decreased by six and seven percent respectively. This was partially offset by record production at both the Syncrude Canada Ltd. and Suncor Energy Inc. integrated oil sands mining plants, which reached a combined average production of 52 000 cubic metres (327 800 barrels) per day, an increase of almost eight percent.

The Board's estimate of remaining conventional crude oil and crude bitumen reserves at year-end 1998 (the last year for which data is available) is 7 505 million cubic metres (47.2 billion barrels) (Table 4). This represents a five-times increase in remaining reserves over 1997 and reflects revisions in the way the Alberta Energy and Utilities Board (AEUB) estimates surface-mineable bitumen reserves. Previously, the AEUB only recognized those surface mining reserves that were in areas under active development, while it now recognizes all areas that could be surface mined. A

similar change is expected for the *in situ* reserves in the near future. There were a number of *in situ* projects started in 1998 and these reserves are now reflected in the reserves report. For active projects, remaining reserves of oil sands products were estimated to be 769 million cubic metres (4.5 billion barrels) at year-end 1998, representing an increase of 25 percent from 1997.

Conventional oil reserves in Canada decreased in 1998 by two percent to 650 million cubic metres (4.1 billion barrels) (Table 5). Alberta and Nova Scotia reserves decreased while British Columbia showed a small increase. Other provinces remained about the same as at the end of 1997.

Table 4
Estimates of Established Reserves of
Crude Oil and Bitumen at
31 December 1998

(million cubic metres)

Conventional Crude Oil	Initial	Remaining
British Columbia ^(a)	116.3	26.2
Alberta ^(b)	2 490.1	315.2
Saskatchewan ^(c)	716.7	190.1
Manitoba ^(d)	37.4	4.2
Ontario ^(e)	14.1	2.0
NWT and Yukon:		
Arctic Islands & Eastern		
Arctic Offshore ^(f)	0.5	0.0
Mainland Territories -		
Norman Wells	38.0	9.8
Nova Scotia ^(g) -		
Cohasset and Panuke	7.1	0.4
Newfoundland ^(d) - Hibernia	106.0	102.0
Total	3 526.2	649.9
Crude Bitumen		
Oil Sands - Upgraded Crude ^(b)	570.0	450.0
Oil Sands - Bitumen ^{(b),(g)}	6 730.0	6 405.0
Total	7 300.0	6 855.0
Total Conventional and Bitumen	10 826.2	7 504.9

a) British Columbia Ministry of Energy and Mines and NEB common database

b) Alberta Energy and Utilities Board and NEB common database

c) Provincial estimate for 31 December 1997, NEB updated to 31 December 1998

d) Provincial Agencies and Offshore Boards

e) Canadian Association of Petroleum Producers

f) Bent Horn abandoned 1996

g) Reflects provincial changes; under the previous format these figures would be 644 and 319 respectively.

Note: totals may not add due to rounding

Table 5
Conventional Crude Oil Reserves,
Additions and Production
1994 to 1998^(a)

(million cubic metres)

	1994	1995	1996	1997	1998	Total
Additions	47	90	56	86	68	347
Production	78	80	81	81	83	403
Total						
Remaining						
Reserves	657	667	643	666	650	

a) Excludes Hibernia reserves additions and production

In 1998, industry activity levels in the western provinces were about the same as the average over the last decade. Development drilling, directed at production from existing pools, accounted for 86 percent of drilling activity, as opposed to exploration drilling which is directed at finding new reserves. However, activity was less focused on oil drilling, with greater emphasis on gas, relative to previous years. This resulted in an overall reduction in remaining oil reserves, as additions did not replace production of conventional crude oil.

While remaining established reserves are reduced by production each year, new discoveries, extensions to existing pools and revisions to reserves estimates in existing pools add to reserves. From 1994 to 1998 on a cumulative basis, additions to established reserves of conventional light and heavy crude oil have replaced 86 percent of production. For the third time in the past five years, 1998 additions did not fully replace conventional crude oil production. Reduced drilling activity, especially in the Saskatchewan and Alberta heavy oil areas, was primarily responsible. Conversely, the two years in which additions were higher than production coincided with higher activity levels.

Industry Activity

A total of 10 608 wells were drilled in Canada in 1999, a nine percent increase over 1998 (Figure 3). Of these, only 2 734 were oil well completions, a 13 percent decrease. Industry drilling activity favoured gas over oil due to the increased gas

demand related to pipeline capacity expansions, and also due to the low oil prices in the first quarter of 1999 that discouraged oil-directed drilling. Horizontal well drilling was down 21 percent from the previous year. The average well depth in 1999 decreased by about 150 metres to 1 090 metres per well and the overall drilling success rate increased due to the higher concentration on shallow gas drilling. It is expected that the decline in oil drilling will result in a further reduction in remaining reserves in 1999.

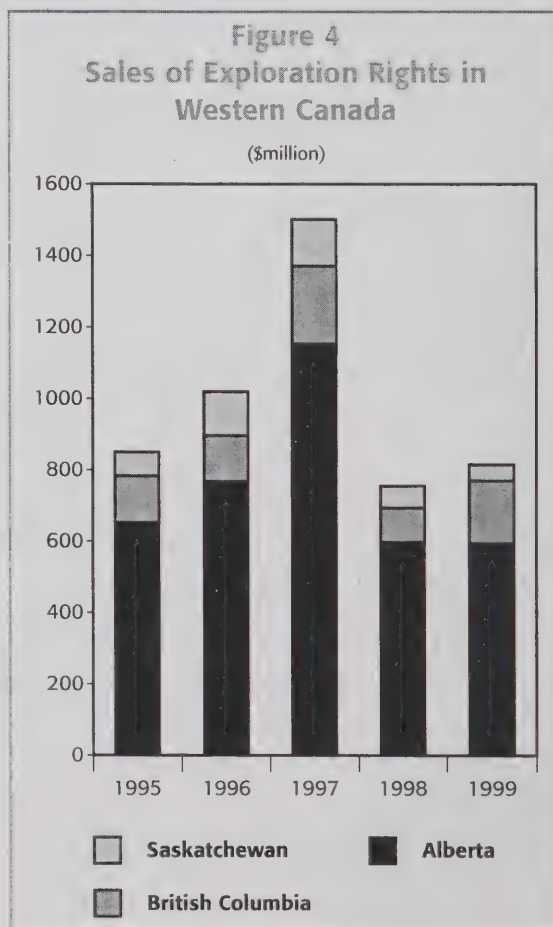
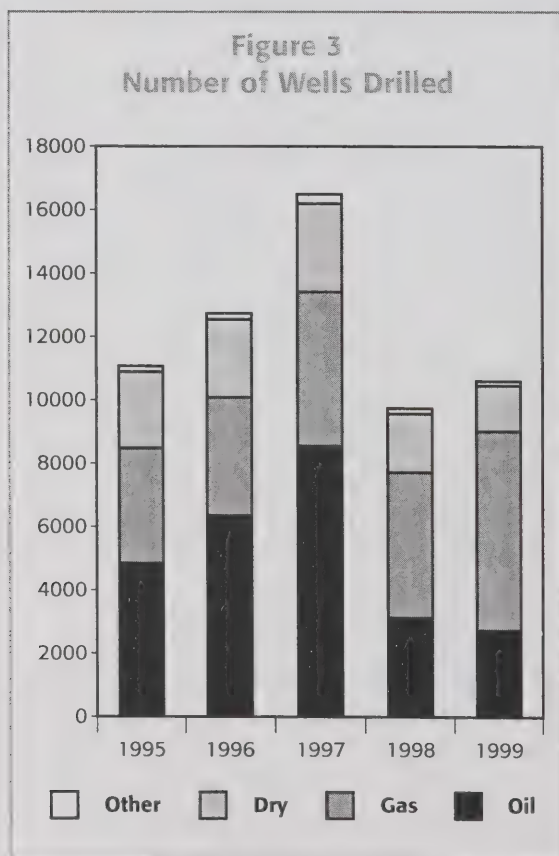
In 1999, there were 4.1 million hectares of lease and licence sales in western Canada, an increase of 0.1 million hectares from 1998. Revenues received from land sales increased eight percent to \$816 million from \$754 million the previous year (Figure 4). Frontier work commitment bids - covering offshore Nova Scotia, offshore Newfoundland and the Mackenzie Delta - were almost \$1 billion, more than the total commitments received during all the previous years of the decade.

Compared to 1998, 1999 geophysical activity in Canada had a slow start in the first seven months but improved over the remainder of the year. The average crew count for the year was 31, down 18 percent from 1998 and the lowest it has been since 1992.

Crude Oil Exports

Total crude oil exports, including pentanes plus and synthetic, are estimated at 195 500 cubic metres (1.2 million barrels) per day, down one percent from 1998. The 1999 total consisted of approximately 90 500 cubic metres (570 150 barrels) per day of light crude oil and equivalent, and approximately 105 000 cubic metres (661 500 barrels) per day of blended heavy crude oil.

The estimated value of crude oil exports was \$11.1 billion, compared with \$6.9 billion in 1998. Although export volumes decreased, revenues increased because of high crude oil prices in the second half of the year. The estimated average



light and heavy crude oil export prices were \$168.80 and \$142.40 per cubic metre (\$26.80 and \$22.60 per barrel) respectively, compared with \$120.00 and \$85.60 per cubic metre (\$19.05 and \$13.60 per barrel) (Figure 5).

The U.S. Midwest continued to be Canada's most important market followed by Montana and Washington (Figure 6). Smaller volumes were shipped from the east coast to the U.S. East Coast and Gulf Coast regions, and also to Rotterdam in the Netherlands. The largest export buyers of light crude oil in 1999 were, in order, Mobil Oil Corporation, Marathon Ashland Petroleum LLC, Sun Refining and Marketing Company, Koch Refining Company, and Tosco, N.W. Co. The largest buyers of heavy crude oil exports were Koch, BP Amoco, Mobil, PDV Midwest Refining, and Conoco, Inc.

Crude Oil Imports

Crude oil imports were 135 700 cubic metres (854 300 barrels) per day, and represented almost 50 percent of total refinery feedstock requirements in Canada, compared with 47 percent in

1998. The Atlantic region and Québec imported most of their crude oil requirements. Ontario refiners received about 26 percent of their feedstock requirements from foreign sources, compared with 23 percent in 1998. This increase reflects the reversal of Enbridge's Line 9 from Montreal to Sarnia. Other regions did not import crude oil during 1999.

North Sea crude accounted for 43 percent of total imports, compared with 42 percent in 1998. Crude oil originating from OPEC countries represented 40 percent, up from 38 percent in 1998. Imports from other sources accounted for 17 percent, down from 20 percent in 1998.

Oil Refining

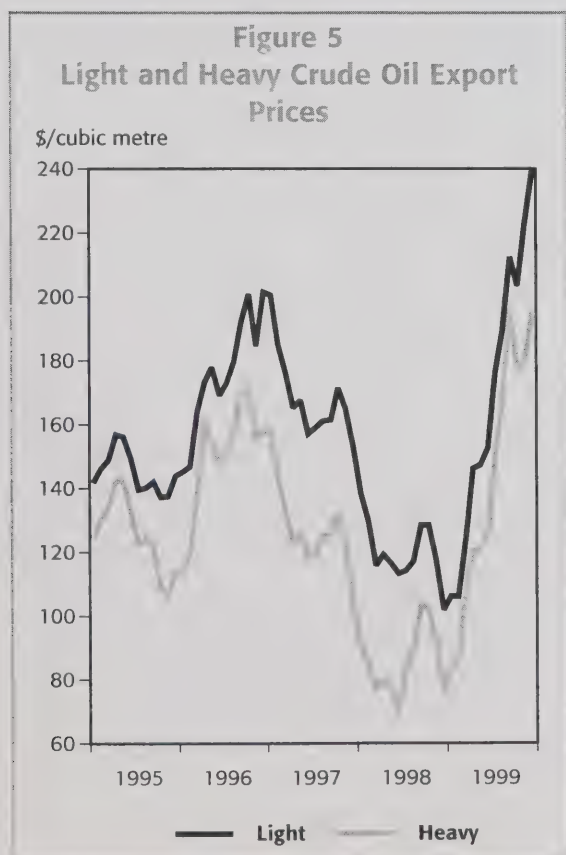
The demand for petroleum products in Canada averaged 247 100 cubic metres (1.6 million barrels) per day, a decrease of two percent from 1998. Refinery production rose marginally to 302 100 cubic metres (1.9 million barrels) per day. Refinery receipts of domestic crude oil averaged 134 800 cubic metres (0.9 million barrels) per day, a decrease of three percent from 1998.

Main Petroleum Product Exports and Imports

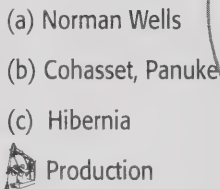
In 1999, exports of main petroleum products and partially processed oil rose by nine percent to 40 800 cubic metres (257 000 barrels) per day. This reflects an increase in shipments of motor gasoline, jet fuel and middle distillates. The estimated revenue, including partially processed oil, was \$2.1 billion, up from \$1.6 billion in 1998. This revenue excludes product exports from crude oil processing agreements for which prices are not assigned. The increase in revenues was a result of stronger prices.

Imports of main petroleum products averaged 16 800 cubic metres (105 800 barrels) per day, a slight decrease from 1998. Imports of middle distillates increased while gasoline, jet fuel and heavy fuel oil declined. Heavy fuel oil did, however, account for 52 percent of the total imports of main petroleum products.

The United States continued to be the largest buyer of Canadian petroleum products, accounting for almost 95 percent of total exports. The



(thousand cubic metres per day)



Oil Pipeline Capacity

tively. This reduction was due to line shutdowns and station bypasses required to accommodate the tie-ins and pipeline segment activations as part of the Terrace Expansion Project. Line 9, which runs from Montreal to Sarnia, was partially reversed from Montreal to Westover in April, with full reversal occurring in October. Line 9 operated at just over 52 percent utilization during 1999.

The Trans Mountain Pipe Line Company Ltd. system operated below capacity during 1999. Throughput information for the system owned

and operated by Express Pipeline Ltd. is not publicly available.

Natural Gas Liquids (excluding Pentanes Plus)

Production of NGL from gas plants and refineries in 1999 is estimated at 97 600 cubic metres (614 880 barrels) per day. Ethane production was 38 000 cubic metres (239 400 barrels) per day, propane production was 33 100 cubic metres (208 530 barrels) per day and the production of butanes was 26 500 cubic metres (166 950 barrels) per day. Propane production declined by about two percent in 1999, while production of butanes and ethane increased by about one and 10 percent respectively.

Exports of NGL during 1999 are estimated at 34 100 cubic metres (214 830 barrels) per day, a nine percent decrease from 1998. Ethane exports were 2 100 cubic metres (13 230 barrels) per day, propane exports were 25 000 cubic metres (157 500 barrels) per day and butanes exports were 7 100 cubic metres (44 730 barrels) per day. Propane exports increased from 1998 levels by one percent, while butanes and ethane exports decreased by 16 and 54 percent respectively. Decreases were attributable to greater domestic demand (primarily petrochemical) and weaker export markets.

The U.S. Midwest continued to be Canada's largest market for propane and butanes, accounting for 65 percent of the total export volume. Smaller amounts were delivered to the U.S. East Coast and West Coast. The largest exporters of propane were, in order Amoco Canada Petroleum Company Ltd., Kinetic Resources (LPG), Canada Imperial Oil Limited and Gas Supply Resources Inc. The major exporters of butanes were Amoco, Kinetic, Petro-Canada Hydrocarbons and Elbow River Resources.

The estimated value of NGL exports in 1999 was \$1.5 billion, compared with \$1.3 billion in 1998. Although export volumes decreased in 1999, higher prices contributed to higher revenues.

Natural Gas

The Canadian natural gas industry experienced strong growth in 1999. Producers were primarily focused on drilling gas wells while the price of oil was recovering from the lows experienced in 1998. In addition, pipeline expansions in late 1998 allowed exports to reach record levels in 1999. As such, natural gas production reached record levels. The increase in production was also accompanied by higher natural gas prices. On the last day of 1999, a new era for the Canadian gas industry commenced with the start-up of production from Sable Island.

Production and Reserves Replacement

Canadian natural gas production in 1999 totalled 162.8 billion cubic metres (5.7 trillion cubic feet [Tcf]), about two percent above 1998. Alberta accounted for 83 percent of production, British Columbia 12 percent, Saskatchewan four percent, and Ontario and the Northwest Territories produced the remainder.

Gas drilling increased by 35 percent in 1999, reaching 6 330 completions. Gas accounted for 60 percent of all wells drilled compared to 48 percent in 1998. The largest increase was in development drilling. There were 4 710 development gas well completions as compared to 3 170 in 1998. The number of exploratory gas well completions increased from 1 420 in 1998 to 1 620 in 1999. Alberta, British Columbia and Saskatchewan experienced increases in gas drilling of 33, 21 and 78 percent respectively.

The Board's estimate of remaining established reserves of marketable natural gas as at year-end 1998 is 1 651 billion cubic metres (58 Tcf). This includes the east coast offshore that went on production at year-end 1999 (Table 6). The volume of remaining established reserves declined by three percent from 1997 as production outpaced reserves additions.

From 1994 to 1998, cumulative additions of marketable gas reserves replaced only 60 percent of total production, although additions in 1998 were the second highest in recent years (Table 7). While the industry still did not replace production the improved performance for gas reserves

replacement was a direct result of more exploration drilling. New discoveries and fewer downward revisions to reserves estimates for existing gas pools, compared with previous years, resulted in the replacement of 119 billion cubic metres (4.2 Tcf), or 74 percent of natural gas production.

Natural Gas Exports and Imports

In 1999, Canadian gas exports reached a record of 95 billion cubic metres (3.3 Tcf), an increase of almost eight percent from 1998 and nearly 21 percent since 1995 (Figure 7). The increase in exports follows expansions on the TransCanada and Foothills Pipe Lines Ltd. (Foothills) systems that resulted in the addition in the late 1998 of 31.2 million cubic metres (1.1 billion cubic feet) per day of additional export capacity.

Table 6
Estimates of Established Reserves of
Marketable Natural Gas at
31 December 1998

(billion cubic metres)

	Initial	Remaining
British Columbia ^(a)	574	229
Alberta ^(b)	3 810	1 240
Saskatchewan ^(c)	191	76
Ontario ^(d)	44	13
NWT and Yukon	18	8
Nova Scotia - Offshore	85	85
Total	4 722	1 651

a) British Columbia Ministry of Energy and Mines and NEB common database

b) Alberta Energy and Utilities Board and NEB common database

c) Provincial estimate for 31 December 1997, updated by NEB to 31 December 1998

d) Canadian Association of Petroleum Producers

Table 7
Natural Gas Reserves, Additions and
Production - 1994 to 1998^(a)

(billion cubic metres)

	1994	1995	1996	1997	1998	Total
Additions	81	166	50	45	119	461
Production	142	150	159	160	160	771
Total						
Remaining						
Reserves	1 813	1 829	1 721	1 698	1 651	

a) Excludes East Coast reserves additions and production

Export sales in 1999 were distributed as follows: 40 percent to the Midwest, 24 percent to the Northeast, 20 percent to California, 15 percent to the Pacific Northwest, and one percent to the Mountain region. Compared with 1998, exports increased to the Midwest and Northeast by 21 and 12 percent respectively, while exports to California and the Pacific Northwest decreased by ten and eight percent respectively. The construction of additional export pipeline capacity has provided Canadian producers with the opportunity to ship gas toward higher-priced markets in the Midwest and Northeast, thereby diverting exports from California and the Pacific Northwest. In 1999, exports to the Northeast surpassed exports to California (Figure 8).

Gas exported under short-term orders, issued for a period of up to two years, continued to increase and reached 69 billion cubic metres (2.4 Tcf) in 1999, up from 62 billion cubic metres (2.2 Tcf) in 1998. Short-term exports represented approximately 73 percent of total gas exports. The remainder of gas exports were shipped under long-term authorizations, the majority of which have terms of no more than 10 years. Imports of natural gas to Canada remained relatively minor in 1999, reaching approximately 1.4 billion cubic metres (0.05 Tcf).

The average price of Canadian gas exports at the international border rose by 17 percent to \$3.09 per gigajoule (GJ) from \$2.65 per GJ in 1998 (Figure 9).

Higher export volumes and prices translated into increased revenue from natural gas exports. Export revenue rose by 23 percent to \$10.9 billion, up from \$8.9 billion in 1998.

Natural Gas Pipeline Capacity

On 31 December 1999, M&NP brought into service 12.6 million cubic metres (445 million cubic feet) per day of Canadian export capacity. It is expected that supply will continue to be developed in 2000 allowing the system to operate near its capacity. In March 1999, Trans Québec & Maritimes Pipeline Inc. (TQM) added 5.0 million cubic metres (175 million cubic feet) per day of export capacity. Expansions on the TransCanada and Foothills systems in late-1998

Figure 7
Canadian Natural Gas Exports

(billion cubic metres)

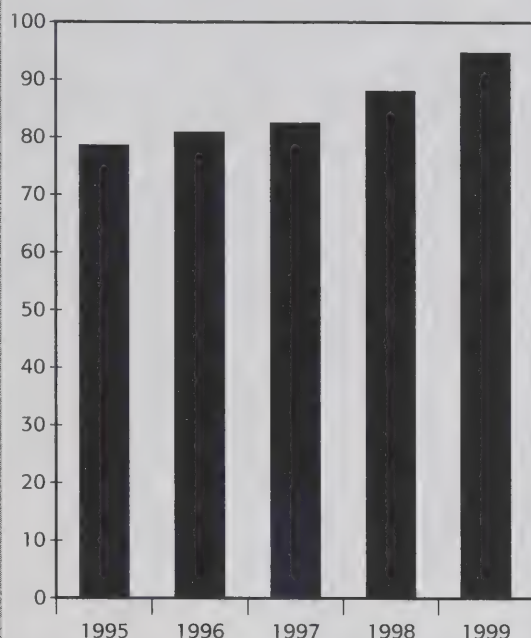


Figure 8
Distribution of Exports 1998 - 1999

(billion cubic metres)

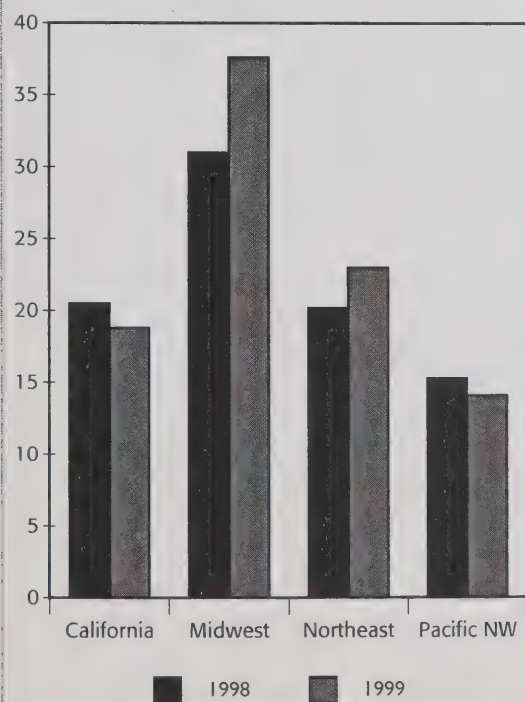
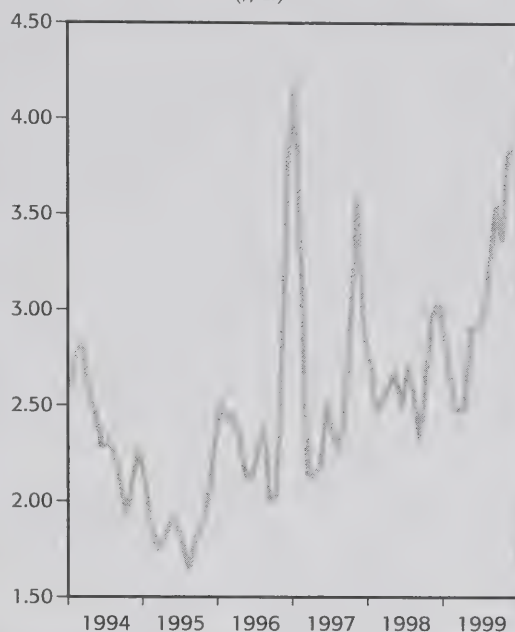


Figure 9
Natural Gas Export Prices

(\$/GJ)



resulted in the addition of 31.2 million cubic metres (1.1 billion cubic feet) per day of additional export capacity. In 1999, the average load factor on Canadian gas export pipelines was nearly 90 percent.

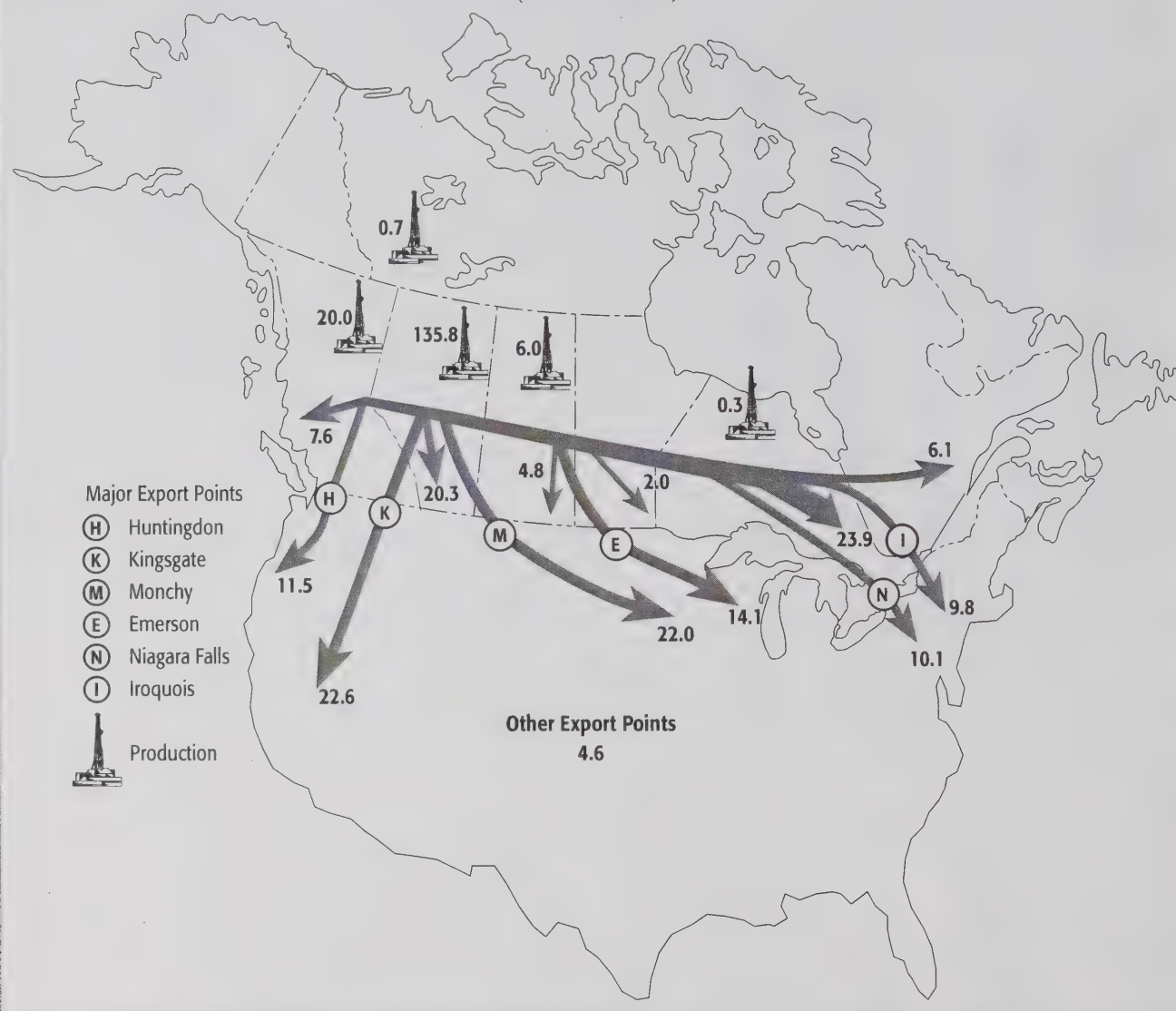
Electricity

In the context of the electricity industry, the Board's mandate relates to the construction of international power lines and the export of electricity. A challenge is presented by the significant ongoing changes in the structure of the Canadian electricity industry. The Board must be aware of the changes and their potential impacts, while continuing to carry out its legislated regulatory obligations.

The North American electricity industry is in the midst of significant change that is expected to result in greater competition in power generation and open access to transmission systems. In the U.S., the issuance, by FERC, of Orders 888 and 889 in 1996 established the framework for industry restructuring. In December 1999, FERC issued Order 2000 which requires the creation and implementation of Regional Transmission

Figure 10
Natural Gas Supply and Disposition 1999

(billion cubic metres)



Organizations (RTOs) by 15 December 2001. The main purpose of these orders is to enhance competition by making the transmission system more independent of wholesale market players. Order 2000 defines the characteristics and functions of RTOs.

Changes in Canadian electricity markets have been driven by provincial restructuring initiatives which are most noticeable in Alberta and in Ontario. In Alberta, the generating utilities are allowed to retain generation assets but the electricity from the facilities will be sold to independ-

ent marketers under a series of Power Purchase Arrangements, which will be auctioned in June 2000. The transition to a competitive retail market will begin in 2001. In Ontario, following the enactment in 1998 of the *Energy Competition Act*, Ontario Hydro was divided into a number of independent functional entities, including Ontario Power Generation Inc. (generation) and Ontario Hydro Services Co. (transmission, distribution and retail). This act also established an Independent Market Operator to manage the spot market and to direct the operation of the provin-

cial transmission system while ensuring reliability and facilitating market participation. Ontario is expected to move to wholesale and retail competition by November 2000. Finally, under the new restructured environment, over 250 municipal utilities in Ontario have until November 2000 to incorporate successor companies under the *Ontario Business Corporations Act*.

In recent years, restructuring has been initiated in several other provinces. Manitoba Hydro has implemented an open access transmission tariff to effect wholesale transmission within Manitoba and on the inter-ties to Saskatchewan, Ontario and the U.S. Hydro-Québec has opened its transmission systems to gain reciprocal wholesale access to U.S. markets. Public consultations were conducted in New Brunswick and a report, issued in 1999 by a legislative committee, could lead to market changes. In Newfoundland, the Public Utilities Board has undertaken a review of the future direction of regulation.

The NEB anticipates that the restructuring which is reshaping the North American electricity scene will preserve the export opportunities for domestic generators, accelerate the development of the non-utility sector and will eventually lead to lower electricity prices.

Electricity production increased by about two percent between 1995 and 1999. The share of nuclear generation declined while hydroelectric and thermal production increased (Table 8). In 1999, approximately 61 percent of generation was from hydroelectric sources, 26 percent from conventional thermal and 13 percent from nuclear generation. Canadian consumption is estimated to have been 526 terawatt hours (TW.h). The Board's long-term energy outlook, *Canadian Energy Supply and Demand to 2025*, June 1999, indicated that there would be a continued predominance of hydroelectric generation and a growing share of gas-fired generation.

Electricity Exports and Imports

Electricity exports continued the strong performance that began in 1994. This was mainly due to increased U.S. demand and favourable hydraulic conditions in Canada. Exports of just over

43 TW.h in 1999 were the third highest of the 1990s. The associated revenue was the largest ever, over \$1.9 billion. Although electricity prices have fluctuated since 1995, the average price of firm exports has risen 22 percent while the price of interruptible exports has more than doubled.

Five utilities supplied about 95 percent of Canada's electricity exports in 1999. In order of quantities exported, they were Hydro-Québec, Manitoba Hydro, B.C. Hydro/Powerex, New Brunswick Power and Ontario Hydro. Ontario Hydro's exports continued to be constrained by the lay-up of some nuclear plants. Manitoba Hydro's exports were down due to a protracted drought in the Winnipeg River basin, which reduced the surplus generation available for export. New England was the largest U.S. market for electricity exports, followed by the states of Washington and Minnesota. These three areas accounted for almost 60 percent of exports.

With regard to the open access to transmission in the U.S., to date there has been little measurable effect on total Canadian exports. Interruptible exports in 1999 were approximately 56 percent of total exports, which is close to the historic average of 60 percent. Exports have shown recent strength and will likely continue to perform well as access to transmission systems improves.

Although Canadian electricity imports increased by about 10 percent to 13 TW.h in 1999, they continued to be small relative to domestic consumption and exports. Almost 52 percent of imports went to British Columbia, followed by Québec and Ontario respectively.

Table 8
Electricity Production^(a)

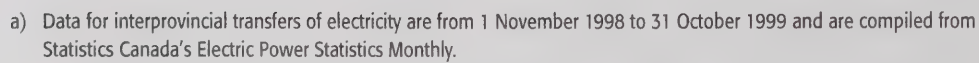
(terawatt hours)

	1995	1996	1997	1998	1999 ^(b)
Hydroelectric	333	352	347	329	337
Nuclear	92	88	78	67	70
Thermal	118	116	132	149	148
Total	543	556	557	545	556

a) Source: Statistics Canada

b) Estimate

(gigawatt hours)



Valuing Energy Costs

Safety and Environment

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Part of the Board's purpose is to promote safety and environmental protection. The NEB's regulatory responsibilities for public safety, as well as protection of the environment are set out in the NEB Act and the *Canadian Oil and Gas Operations Act* (COGO Act). The Board is also required to meet the requirements of the CEA Act and the *Mackenzie Valley Resources Management Act* (MVRM Act) by ensuring that environmental assessments, including follow-up monitoring requirements, are properly conducted for projects under its jurisdiction.

As owners and operators of the facilities, the companies under NEB jurisdiction have the primary responsibility for safety and environmental matters. Nevertheless, the Board ensures that the risks associated with the construction and operation of regulated facilities are properly assessed and managed by the facility owner and operator by:

- assessing new facilities applications for associated safety and environmental issues;
- developing regulations and guidelines;
- monitoring construction and operation to ensure that pipelines meet the high standards of quality required by the *Onshore Pipeline Regulations, 1999* as well as requirements identified through the application process; and
- investigating any failures or incidents which occur, with the intent of preventing similar incidents from recurring.

The integration of these four areas is very important to effective risk management. The Board has taken concerted steps to enhance its ability to ful-

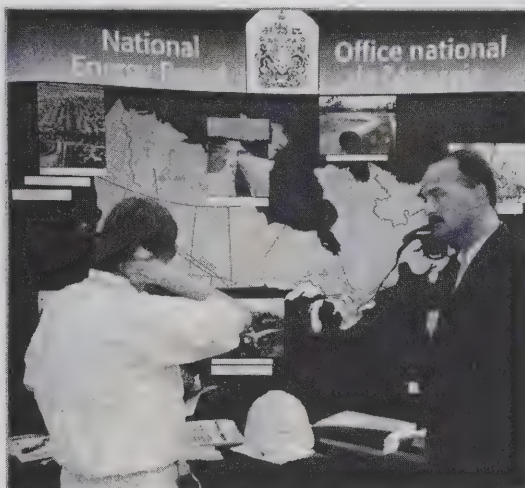
fil its environmental and safety role. These steps are described in the following sections.

New Applications

NEB Act

The Board received 112 applications in 1999 for the construction of new facilities. To ensure early, ongoing and full public awareness of proposed pipeline projects, companies are usually required to carry out an early public notification program. The purpose is to inform the public about the nature of a proposed pipeline project, to identify potential adverse effects, and to provide an

opportunity for the public to influence the project design. The Board evaluates these projects to determine if they are in the public interest and considers many factors which include safety and environmental issues. The Board regularly attaches conditions to the approval of these facilities to ensure that issues identified in the review of the application are addressed.



When new lands and right-of-way are required for these new facilities, the NEB Act contains provisions for land acquisition. Where the land owner and the pipeline proponent do not come to an agreement on the acquisition of lands or right-of-way the NEB Act sets out a detailed process that involves all landowners and affected parties in the examination of the final pipeline route. In 1999 the Board held 15 detailed route hearings associated with the Alliance Pipeline project to consider and decide on contested portions of the pipeline route.

In accordance with the CEA Act, the Board conducts environmental screenings of proposed

facilities. Upon receiving an application, staff determine if a review is required under the CEA Act. This review includes input from other responsible authorities, advice from expert departments and ensures that all of the CEA Act requirements are examined before a decision is made on the application. Even when an application does not trigger a CEA Act review, the Board considers the environmental aspects of the project in accordance with the NEB Act.

COGO Act

In 1999, the Board assessed 93 applications under the COGO Act for activity in Frontier areas. Included in the total were 28 applications for drilling new wells. This was an increase of 53 percent in drilling applications over the previous year and was primarily related to increased oil and gas exploration activity in the Fort Liard area. The applications now coming before the Board reflect a change in activity from the exploration for oil and gas to the development of those resources that have been discovered.

The Ikhil development is a project to move gas in a buried pipeline from wells in the Northwest Territories to the Town of Inuvik. It was constructed in 1999 and has begun supplying the Town of Inuvik and the Northwest Power Corporation with gas for domestic use and for the generation of electricity.

Following the discovery of gas in the Fort Liard area, the NEB approved a development plan submitted by Chevron Canada Resources in anticipation of future applications for the construction of production facilities and a pipeline for the transportation of the gas to southern markets.

In 1999, the Board also made a written declaration of Commercial Discovery in relation to those frontier lands discovered by the well

Paramount *et al* Fort Liard F-36, which was drilled by Paramount Resources Ltd.

The Board also participated in the development of environmental impact assessment guidelines under the new MVRM Act¹ which is used instead of the CEA Act in the Mackenzie Valley² region of the N.W.T. The MVRM Act ensures a greater role for aboriginal people in an integrated system of land and water management and regulation in the Mackenzie Valley. The MVRM Act established a new environmental assessment and impact review process and various new boards responsible for land use planning, land and water management, and environmental impact assessment. Potential impacts of oil and gas activities on land, water resources, and the environment are examined by the NEB, as a Designated Regulatory Agency, and the new Mackenzie Valley boards.

Regulations and Guidelines

The NEB has a statutory responsibility for the safety of pipelines and for energy development within the mandate set by Parliament. A key activity in promoting safety and environmental protection is the creation and maintenance of regulations for the protection and safety of the public, company employees, the environment, and property. The NEB has moved toward a goal-oriented approach to its regulations which promotes increased industry responsibility, allows for flexibility and efficiency, and provides opportunities to adopt improved operational and safety techniques in a more timely manner. The NEB's goal-oriented regulations rely heavily upon consensus standards such as those developed by the Canadian Standards Association (CSA), and place increased emphasis on risk assessment and management systems. Guidance Notes, which are what the NEB considers acceptable practices, are published by the NEB to provide clarity, practical advice, and suggestions to facilitate compliance.

1 The Mackenzie Valley Resource Management Act came into force on 22 December 1998.

2 The Mackenzie Valley is that part of the Northwest Territories bounded on the south by the 60th parallel of latitude, on the west by the Yukon Territory, on the north by the Inuvialuit Settlement Region, as defined in the Agreement given effect by the *Western Arctic (Inuvialuit) Claims Settlement Act*, and on the east by the Nunavut Settlement Area, as defined in the *Nunavut Land Claims Agreement Act*, but does not include Wood Buffalo National Park.

The *Onshore Pipeline Regulations, 1999*, which sets out technical and safety requirements for all stages of a pipeline's life cycle under NEB jurisdiction, came into force on 1 August 1999. These regulations reflect the progression towards goal-oriented regulations. Companion Guidance Notes, involving extensive stakeholder consultations, were issued in September 1999.

The Board is also preparing new goal-oriented regulations for the design, construction, operation, and abandonment of gas processing plants which are owned and operated by federally regulated companies and whose function is integral with respect to transportation. These facilities are presently regulated under the *Onshore Pipeline Regulations, 1999*.

The Board is active in developing and maintaining safety and environmental regulations pertaining to exploration and development activities pursuant to the COGO Act. These regulations, developed in cooperation with



Natural Resources Canada (NRCan), the Canada-Newfoundland Offshore Petroleum Board (C-NOPB), the Canada-Nova Scotia Offshore Petroleum Board (CNSOPB), Nova Scotia Department of Natural Resources, and the Newfoundland Department of Mines and Energy, ensure common regulatory approaches for activities in the offshore regions, the Northwest Territories and Nunavut (frontier lands). To this end, consultations were undertaken in 1999 to amend five regulations and two guidelines under the COGO Act, and mirror

regulations under the Accord Implementation Acts. The changes update and modernize existing regulations and guidelines and introduce goal-oriented regulations to frontier land activities. Consultations were also commenced to update the *Canada Oil and Gas Occupational Safety and Health Regulations* under the *Canada Labour Code, Part II*.

The NEB participated in the revisions to the *Exclusion List Regulations* under the CEA Act. These revisions were promulgated in November 1999

and provide environmental assessment



exclusions for routine pipeline projects that do not have any adverse environmental effects, are within a pipeline right-of-way, and are more than 30 metres away from a

water body. These changes will facilitate the streamlining of routine facility approvals.

The Board participates with industry, various levels of government, and stakeholder groups in a number of initiatives to develop consensus-based standards, best practices, and common approaches to safety and environmental issues. Examples include the NEB's participation in the preparation of the standard for oil and gas pipeline systems, CSA Z662-99 issued in July 1999 and the preparation of the second edition of the Canadian Pipeline Water Crossing Committee guidelines issued in November 1999. These publications update existing standards and provide guidance to address new issues and evolving technology.

Construction Monitoring

When approving a facilities application, the Board frequently attaches conditions which must be satisfied prior to or during the construction or operation of a project. In 1999, a total of 543 conditions were placed on the 128 facilities approvals issued by the Board. Almost half of these conditions were related to environmental matters.

Companies must also construct and operate facilities in accordance with the Board's regulations. The Board requires that companies use qualified environmental inspectors to oversee construction activities. Typically, these individuals have the authority to select appropriate mitigative measures and to stop activities that may cause unnecessary impacts. The Board monitors the construction of pipeline facilities to ensure these requirements are met, as well as any commitments made by a company during the assessment of a project.

In 1999, a number of large projects, comprising over 2 100 kilometres of new pipeline, were constructed. These projects included the first phase of the Alliance Pipeline, the Sable Offshore Energy Project (SOEP) and M&NP's mainline, TransCanada projects and Souris Valley's project. In addition, nine new companies came under the Board's jurisdiction with facilities approved in 1999.

During 1999, the Board conducted 80 site inspections on construction projects, a 35 percent increase over the previous year. During inspections, Board inspection officers verify plans and construction techniques and evaluate the effectiveness of the company's inspection program that oversees construction activities.

Given its shared jurisdiction with the CNSOPB for the offshore portion of the SOEP pipeline, the Board appointed two CNSOPB employees as inspection officers pursuant to the NEB Act. This designation invests the inspection officer with authority to write orders regarding situations that pose an immediate hazard to safety or environment.

When construction is complete, but before the facilities are put into operation, companies are required to apply for leave of the NEB to open their facilities for the transmission of hydrocarbons. When the Board is satisfied that the facilities are safe for operation permission will be granted to open the pipeline or an exemption from the requirement for leave to open will be granted. The Board issued 116 orders granting leave to open in 1999.

Monitoring of Existing Facilities

The Board has programs in place to assess and monitor the safety and environmental practices of existing pipeline systems and the associated facilities operated by over 90 companies. The goal is to ensure that the facilities are safe and are operated in a manner that protects the environment and the public.

The key aspect of this safety program is delivered through safety management audits conducted by Board staff. In 1999, the Board completed safety management audits of 11 companies. During these audits, the Board examines operations and maintenance manuals, emergency response manuals, safety training programs, operation and maintenance records, and assesses safety-related operational issues. Board staff visit selected facilities to confirm operating procedures are in compliance with those set out in company manuals. Audit findings indicate that companies are generally in compliance with the Board's requirements, although there were instances of non-compliance on minor matters.

Another aspect of the safety program is the inspection of specific operating facilities. In 1999, a total of 28 facility inspections were conducted to determine compliance with NEB Act regulations and with the *Canada Labour Code, Part II*. Only minor issues were identified, which typically were remedied quickly by the company involved.

The Board conducted four audits of companies' third party damage prevention programs. These programs are required by the Board's *Pipeline Crossing Regulations*. The programs are focussed on improving the awareness of third parties,

including landowners and companies undertaking excavation, of pipeline safety and preventing damage to buried pipelines. In addition to these audits, Board staff conducted 12 inspections along existing pipeline systems to identify whether or not third party work was being completed in compliance with the regulations. No significant issues were identified during the course of these audits and inspections.

The Board made arrangements in 1999 to co-host its third Public Awareness Workshop with the American Petroleum Institute (API). The workshop is to be held in May 2000 in Niagara Falls, Ontario. The purpose of the workshop is to provide a venue for presentations from industry leaders and to share experiences relating to successes and challenges on public awareness issues facing the pipeline industry.

In 1999, the NEB finalized its risk-based methodology for pipeline facility inspections. In the past, the NEB inspected all of the above-ground facilities under its jurisdiction (approximately 500) on a two to three year cycle. However, with ever increasing numbers of facilities and finite resources allocated to inspection, the NEB saw the need to implement a risk prioritization methodology to assist in allocating resources and prioritizing inspection efforts based on safety and environmental risk.

Pipeline rights-of-way under Board jurisdiction are monitored following construction to ensure that environmental issues have been dealt with successfully and that the right-of-way has been restored. In addition companies are typically required to submit post-construction monitoring reports to provide a review of the effectiveness of environmental protection measures implemented during construction and the efforts taken to mitigate these issues throughout the project life. In most cases, the rights-of-way are fully remediated after two growing seasons following construction. The Board received 50 monitoring reports in 1999; the results of the review will be incorporated into future Board inspections.

Once in operation, the condition of the right-of-way is checked periodically. In 1999, the Board conducted an overview of the Enbridge and

Express Pipeline Ltd. (Express) pipeline systems, two major pipeline systems, to confirm the effectiveness of ongoing environmental protection measures.

Above-ground facilities such as compressor and pumping stations, are also monitored on a regular basis for operational issues such as noise and air emissions. In 1999, the Board received 27 monitoring reports from companies providing noise and air emission surveillance information regarding recent installations. The results of the review are incorporated into future Board inspections.

Landowner Complaints

The Board responds to landowner complaints concerning impacts caused by the construction and operation of pipeline facilities. In most cases the Board ensures that the company is made aware of the complaint and encourages the company to remedy the situation. The Board inspects some of these properties to verify that protection of the environment is achieved. In 1999, the Board conducted landowner surveys of which a portion of the survey was regarding safety and environmental matters. In general, the results of the survey showed that landowners were satisfied with the condition of their properties following construction.

During 1999, the Board received 81 complaints made by landowners arising from land rights, operational, and construction issues. It is likely that the number of landowner complaints will rise in the future due to increased public awareness, particularly among landowners, regarding the Board's requirements for protection of the environment and public safety.

Enforcement

The Board uses a graduated approach to resolving minor instances of non-compliance with terms or conditions of approval or regulations. When a violation cannot be rectified immediately, but does not represent an immediate or serious hazard, the company is requested to provide the Board with an Assurance of Voluntary Compliance (AVC), detailing the deficiency and the steps planned to address it. If an AVC is not received by Board staff, a letter from the Board is

sent to the company outlining the non-compliance and the Board's expectations. Upon review of the company's response, the letter may be followed with a direction from the Board specifying the actions the company must take to remedy the non-compliance. Hazardous situations which pose an immediate danger to property or the environment and necessitate immediate and direct action, are addressed through the issuance of an Order by an NEB inspection officer. Upon receipt of the Order, the company is compelled to rectify the situation. If a problem is not rectified, the Board has further remedies for compliance available to it. There are similar provisions for non-compliance under the COGO Act and *Canada Labour Code, Part II*.

As a result of this graduated approach, in 1999 no penalties were imposed and three orders were issued to address potentially unsafe practices and hazards to the environment. In all instances, the company responded immediately and continued to address the issue for the remainder of the project. Two hundred and twenty-five AVCs were received from regulated companies during 1999 pursuant to NEB Act matters.

A total of 43 violations to the *Pipeline Crossing Regulations* were reported in 1999. This number is slightly higher than 1998 and the three-year average. A crossing violation occurs when a third party conducts excavation work on or within the 30 metre safety zone adjacent to the pipeline right-of-way without the consent or knowledge of the pipeline company. These violations are typically by landowners or by utility companies. None of the violations resulted in damage being done to pipelines. The Board conducts investigations into each of the reported violations with the intent to identify factors which led to the violation and to educate stakeholders about the importance of public safety when working near operating pipeline systems.

In the frontier lands, Board staff conducted 43 inspections of exploration and production sites to ensure that operations were in compliance with approved program and regulatory requirements pursuant to the COGO Act.

The development of a new environmental and safety compliance policy for the Board was identified as a key activity with respect to two of the Board's goals: NEB-regulated pipelines are safe and perceived to be safe and NEB-regulated pipelines are built and operated in a manner that protects the environment and respects individuals' rights. The need for a revised and expanded compliance policy arose from the development and promulgation of the new goal-oriented *Onshore Pipeline Regulations*, 1999, and was seen as a necessary step in addressing recommendations made by the Auditor General in September 1998. In 1999, the Board made significant progress towards developing its policy and will conclude the project in early 2000.

Incident Investigation

Pipeline safety is an important expectation of the public and it is, therefore, one of the Board's strategic goals that pipelines under the Board's jurisdiction are safe and perceived to be safe by Canadians. The Board is continually looking for ways to improve safety and encourages pipeline companies to provide information on pipeline safety performance by requiring companies to immediately report incidents on their systems. The definition of what constitutes an incident is set out in the *Onshore Pipeline Regulations*, 1999.

Even minor incidents can provide indications of the condition of a pipeline or required improvement to safety programs. The Board endeavours to investigate all reported incidents to determine if any trends are evident and to take action if necessary to prevent similar occurrences in future. Nevertheless, the Board may conduct detailed on-site investigations only for accidents that result in deaths, serious injuries or significant releases of hydrocarbons.

In 1999, a total of 74 incidents were reported. This compares to 78 incidents in 1998, 88 incidents in 1997 and an average of 71 incidents for the years 1992-1998. Fifteen of these incidents resulted in injuries with twelve of those directly related to construction activities and the remainder resulting from maintenance activities. Forty-three incidents resulted in product being released (Figure 12).

Of the 74 incidents, over two thirds occurred at controlled areas such as compressor stations or gas plants. Thirty-eight incidents occurred at compressor or pump stations, eleven at gas plants, and the remainder occurred along pipeline rights of way and one incident occurred offshore.

Continuing a five year trend of declining pipeline ruptures, only one pipeline rupture occurred in 1999 (Figure 13). This rupture involved Enbridge's Line 3 at a location immediately east of Regina, Saskatchewan. While no injuries to either the public or company employees resulted, 3 275 cubic metres of crude were spilled. The reduction in major pipeline failures has been due to a variety of factors which includes increased attention by the industry on preventative maintenance, new technology to monitor and repair pipelines, and a decrease in ruptures caused by slope failures.

It is also notable that since the NEB's November 1996 report "*Stress Corrosion Cracking (SCC): Public Inquiry Concerning Stress Corrosion Cracking on Canadian Oil and Gas Pipelines*," no SCC-related service ruptures have occurred on NEB-regulated pipelines. The inquiry report contains 27 recommendations pertaining to the development of company-specific SCC management programs, changes to the design of pipelines, continued research into SCC, the development of an industry-wide SCC database, improved emergency response practices, and information sharing.

The Board ensures that all companies under its jurisdiction have adequate emergency response

plans to deal with and reduce or mitigate any negative effects on personnel safety, public health or the environment resulting from oil spills or natural gas leaks. Response plans are examined to ensure adequate procedures are in place. In addition, the Board encourages and participates in company-sponsored emergency response exercises.

The Board's primary role during an emergency is to monitor the company's response, ensuring that all reasonable actions are being taken to protect public safety and the environment. The Board utilizes an information tracking system to ensure that the company involved fulfills its remediation responsibilities regarding sites that have been affected by spills and releases. In 1999 a total of 37 minor and four significant spills and releases occurred.

Following the Enbridge rupture near Regina, Saskatchewan, the Board worked with Enbridge and other stakeholders to ensure that clean up and remediation of the site was implemented. Within three months of the spill, Enbridge was able to demonstrate that the majority of the site

Figure 13
Pipeline Incidents and Ruptures

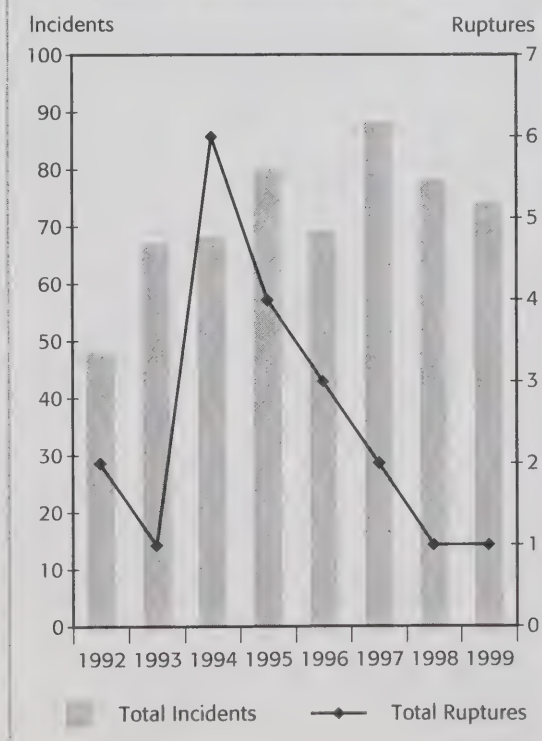
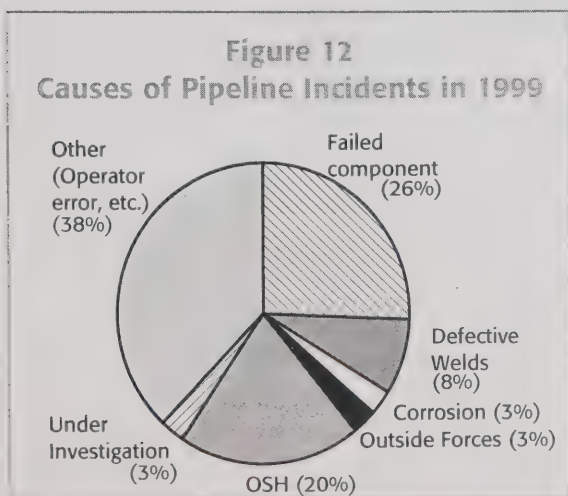


Figure 12
Causes of Pipeline Incidents in 1999



had met acceptable provincial guidelines and a plan was developed to complete the remaining clean up and remediation.

Three other significant spills occurred on NEB regulated pipelines, one on the Enbridge Pipeline system at Glenboro, Saskatchewan and two on the Montreal Pipe Line Limited system in Quebec. In each case the company responded immediately and cleaned the site to the satisfaction of the stakeholders.

Under COGO Act provisions, a total of 22 hazardous occurrences were reported in 1999, up slightly from 1997. Even with an overall increase in activity levels north of the 60th parallel, the 1999 injury frequency was still the same as 1998 on an incident per man-hours worked basis. This indicates that the companies are continuing to observe safe work practices and attempting to maintain a safe workplace for the workers. There were 20 spills north of the 60th parallel. Clean up on a few of these spills is outstanding with no adverse environmental effects expected.

Transportation Safety Board (TSB)

The NEB shares responsibility for the investigation of pipeline incidents with the TSB, an independent federal investigation agency. In accordance with an agreement between the two agencies, all incidents are initially reported to the TSB. If the TSB decides to conduct an investigation, the NEB may participate but is prohibited from making public findings as to the cause and contributing factors of the incident. The TSB has the authority to issue recommendations, to which the NEB may be required to respond. The NEB can investigate to ensure that its regulations were not violated and/or to determine the need for remedial action. In order to avoid duplication of work, the two agencies coordinate their investigations.

In 1999, the TSB released two reports arising from major investigations involving Board regulated facilities. One report included a recommendation regarding the detection and assessment of certain types of corrosion defects found in isolation or together with cracks. The NEB subsequently distributed a safety advisory letter regarding the potential limitations of in-line

inspection technology and undertook to send a letter to the CSA Technical Committee identifying concerns regarding defect assessments.

Effective 1 September 1999, all incidents and occurrences as defined under the *Onshore Pipeline Regulations*, 1999 and the *Canada Labour Code Part II* were reported through the TSB Occurrence Hot Line with the TSB forwarding the information to the NEB. This one window reporting system was implemented to reduce the duplication between the two agencies.

Year 2000 (Y2K) Preparedness

With much of the pipeline and electricity utility operations controlled by computers, the NEB recognized the potential impact that a failure of equipment due to Y2K problems could present to public safety and the environment. The NEB was very active in promoting Y2K preparedness throughout 1999. Monitoring of regulated companies' efforts was realized through a coordinated effort with the NEB, the oil and gas industry, the Canadian Electricity Association, NRCan and the National Contingency Planning Group. This initiative provided the information needed to the various government agencies through a single window and single format approach while minimizing the effort required by industry to report on preparedness.

Overall, NEB-regulated companies were very proactive in preparing for Y2K. By December 1999, all regulated companies were ready for the 1999/2000 rollover and the new year was met with no Y2K related incidents reported by NEB-regulated companies.

Research and Development

The Board acts as secretariat for Environmental Studies Research Funds, which finances environmental and social projects pertaining to petroleum exploration, development, and production activities on frontier lands. Three new research projects were initiated in 1999 to reflect increased activities on the East Coast. These projects examine effects of seismic activities on fisheries, cumulative effects assessment, and coastal resource inventory in Newfoundland. These projects are continuing in 2000.

Public Information Services



Stakeholders expect the NEB's processes to be accessible and easy to understand. Whether explaining how to participate in a public hearing, sharing the results of a pipeline safety audit or issuing a decision, the NEB aims to provide information that meets stakeholder needs.

NEB information is available through a variety of processes and tools. As better technology becomes available, the Board is moving toward electronic document production and distribution, while maintaining the commitment to provide paper documents for those who need them.

Year 2000 (Y2K) Activities

The Y2K project work gave the Board an opportunity to introduce current technology and set the stage to steadily improve internal systems to meet its business challenges.

The NEB's preparations during the past two

years can be split into two parts: first, ensuring that Board regulated companies were preparing and ready for Y2K; and second, analyzing internal operations to determine Y2K priorities. To meet these needs, the Board created an internal project office which was responsible for carrying out all internal activities and a separate team that communicated with and monitored the energy industry and Board-regulated companies.

A risk assessment of internal Board systems and networks was completed to determine the likelihood of internal computer system failure. Although the results of this assessment indicated a low risk of failure, contingency plans were put

in place for all important business processes. Plans were also developed for each business application or computer hardware system that was related to an important business process. All reasonable efforts were taken to minimize the risk of any business disruption from Y2K issues.

The rollover to Y2K necessitated the discontinuation of the Board Document System (BDS). The data on the BDS was preserved and reformatted and will be accessible via Electronic Regulatory Filing (ERF). Legacy Reasons for Decisions and hearing transcripts previously stored on the BDS were moved to computers in the NEB library to allow continued electronic access.

The Board did not encounter any business disruptions during the rollover to Y2K but some minor remediation work continues.

Electronic Regulatory Filing

The NEB is continuing development of the ERF project with the Ontario Energy Board (OEB) and representatives of the regulated energy

industry. The ERF system will provide a method of creating, storing, exchanging and re-using regulatory information. This system will be available through its Web site and the NEB has developed processes to ensure the accuracy and

security of electronic records stored in the ERF repository.

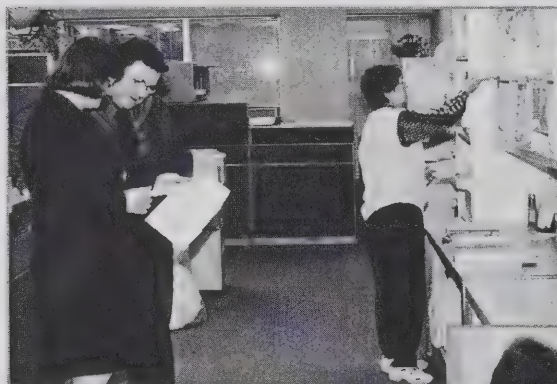
To test the system using large documents in SGML format¹, M&NP took part in an ERF pilot project. The company successfully created their tolls and tariffs application in SGML. The



1 Standardized General Markup Language (SGML) is an electronic format that allows documents to be stored for long time without relying on specific software packages or versions of technology.

findings from this pilot were used to review the standard document structure.

Guidelines have been created for document formatting which will be used for complex submissions. In addition, standard forms for simple submissions, such as letters of comment and letters of intervention, are being developed. These forms will allow the general public and other interested parties to participate electronically in a hearing process without becoming expert in the ERF Technology. The procedures will also



ensure that individuals who do not have access to the NEB's Web site can participate in Board proceedings using other methods of sending and receiving documents.

The Board is making changes to its procedures to prepare for the ERF environment. A draft proposal for changes to the *NEB Rules of Practice and Procedure* was released for public consultation in November 1999.

Communications Instruments

Internet Web Site

The Board's Web site (www.neb.gc.ca) has been operating since 1996. The site has become a key tool for accessing information about the NEB.

The Board's site includes freely available information about: the Board's regulatory role; NEB special reports about energy exports, energy

markets, frontier lands, pipeline safety, and pipeline tolls; current regulatory proceedings including Hearing Orders, Regulatory Agendas and Reasons for Decision; and monthly energy statistics. In 1999, the Board began posting the transcripts of all its public hearings to the site. Prior to this, transcripts had to be purchased from a court reporting service.

News Releases

Information about public hearings, Board decisions, public consultations and major changes to regulations and procedures was sent to the media through 46 news releases in 1999. The Board encourages clients to access news releases via the Board's Web site. News releases are also available from the library, by fax or by mail.

Regulatory Agenda

Since 1982, the Board has published a quarterly *Regulatory Agenda* which provides information

about regulatory applications and other Board matters.

This document is updated monthly on the Web site and quarterly in paper. The quarterly *Regulatory Agenda* continues to be mailed to those people who request a paper copy.

Information Bulletins

The Board publishes a series of information bulletins and brochures about its activities.

This year, a committee of NEB staff members conducted a review of the bulletins. The committee decided that many of the bulletins needed to be updated and written in plain language.

A group of technical experts from throughout the NEB is now re-writing the bulletins. The current set of bulletins and brochures will be available through the NEB library and our Web site (see Supplement III for a list) until the new bulletins are published.



Other Information Services

Library/Publications

The NEB library is the public viewing point for applications submitted to the Board and related public documents. The library maintains a collection of Board publications and hearing documents as well as reference materials, books and periodicals related to the Board's mandate. Library hours are 9 a.m. to 4 p.m. week days. To contact the library, call (403) 299-3561, 1-800-899-1265 or email library@neb.gc.ca.



The library receives over 350 requests per month from the public. The library satisfies over 90 per cent of requests from its collection or other Board resources. Clients requesting information not available at the Board are routinely referred to an alternative information source.

Requests for both library information and publications come from walk-in clients, phone calls, facsimile messages, letters and electronic messages. The publications distribution function of the Board is housed at the library. About 150 publication requests are filled each month.

To order publications contact:

Publications Coordinator
National Energy Board
444 Seventh Avenue S.W.
Calgary, Alberta, Canada T2P 0X8
Email: orders@neb.gc.ca
Phone: (403) 299-3562
Fax: (403) 292-5503
1-800-899-1265

For More Information

For more information on any of the Board's services or activities, call (403) 292-4800 or 1-800-899-1265, send a facsimile to (403) 292-5503 or visit the Board's Web site (www.neb.gc.ca).

Corporate Activities

The NEB as an Employer

The NEB is a federal public service regulator located in Calgary. As a separate employer (which is) under the *Public Service Employment Act*, The Board has the flexibility to take advantage of opportunities inherent to a large organization while adapting many policies and procedures to reflect its unique requirements. For example, the NEB has its own classification system which reflects the spectrum of NEB positions. In addition, terms and conditions of employment are negotiated directly with two unions that represent a large proportion of employees.

As an employer one of the Board's strategies is to provide reasonable remuneration and a positive and fulfilling working environment. It recognizes the importance of achieving a balance between work and personal life and supports individual efforts to achieve that balance by offering flexible work arrangements.



Management of the NEB

During 1999, the NEB confirmed its long-term strategic plan (see Supplement II). The updated plan allows for evaluation of its performance, the establishment of priorities and the development of planning processes to achieve results in an effective and cost-efficient manner. It also facilitates the alignment of business unit, team and individual accountabilities.

The multi-disciplinary, team-based structure which exists at the NEB allows for leadership of business lines through Business Unit Leaders and Team Leaders and for the professional develop-

ment of employees through Professional Leaders of Economics, Engineering and Environment.

40 Years of History

In November 1999, the NEB celebrated its 40th anniversary by inviting present employees, representatives of its various stakeholder groups and past and present officials to participate in a commemorative event at the Westin Hotel in Calgary. Over 600 attended this festive occasion.

The NEB has also arranged for the preparation of a publication on the 40 years of operation of the Board. This book is scheduled for release in 2000.

Financial Spending

Since 1991, up to 90 percent of the NEB's operating costs have been recovered from the regulated community rather than the taxpayer. In 1998 and 1999, a review of the cost recovery process was undertaken to ensure fairness to all participants.

Table 9 shows the Board's expenditure and staff levels for the last five fiscal years. Additional information on budgets and plans may be found in the *NEB 1999-00 Main Estimates, Part II* and the *1999-00 Report on Plans and Priorities*, both of which are available from the NEB's Web site at <http://www.neb.gc.ca>.

Table 9
Historical Expenditures and Staffing

Fiscal Year (April 1 to March 31)	Expenditures \$000	Full-time equivalents
1995 - 1996	25,911	279
1996 - 1997	26,855	272
1997 - 1998	28,048	264
1998 - 1999	30,960 ^(a)	277
1999 - 2000 ^(b)	26,583	281

a) In 1998 the NEB made payments of \$22.2 million attributable to out-of-court settlements with the energy industry relating to relocation costs of the NEB on the move from Ottawa to Calgary.

b) Estimate

Supplement I

The Board's Mandate

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The Board is an independent regulatory tribunal established in 1959. It reports to Parliament through the Minister of Natural Resources Canada (the Minister). The Board is a court of record. With regard to attendance at hearings, the swearing and examining of witnesses, production and inspection of documents and the enforcement of its orders, it has the powers of a superior court. At the end of 1999, the NEB had eight permanent board members, out of a possible total of nine. Permanent board members are appointed for a term of seven years. Four temporary members also served during the course of the year.

The Board's regulatory powers under the NEB Act include granting authorizations for: the construction and operation of international oil, gas and commodity pipelines; construction and operation of international and designated interprovincial power lines; the setting of tolls and tariffs for oil and gas pipelines under its jurisdiction; the export of oil, natural gas and electricity, and the import of natural gas. The Board also has regulatory powers under the COGO Act and certain provisions of the CPR Act for oil and gas exploration and activities on frontier lands not otherwise regulated under joint federal/ provincial accords.

The Board's mandate includes providing expert technical advice to the CNOPB and the CNSOPB, NRCan and Indian and Northern Affairs Canada.

Under the CEA Act, the Board is responsible for conducting environmental assessments of the planning, construction, operation, maintenance and abandonment of energy projects within its jurisdiction. Under the NEB Act and the COGO Act, the Board's environmental activities have evolved into three distinct phases: evaluating the potential environmental effects of proposed projects; monitoring and enforcing terms and condi-

tions attached to project approvals; and the ongoing monitoring of operations.

The Board is responsible for ensuring the safe operations of the pipelines under its jurisdiction and the Board's inspectors are appointed Safety Officers for the administration of the *Canada Labour Code, Part II*.

The Board provides advice to the Minister on matters relating to its regulatory expertise upon the Minister's request. The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*. Below is a listing of Acts, Regulations, Rules and Guidelines under which the Board operates or has responsibilities.

Acts

National Energy Board Act
Canada Labour Code, Part II
Canada Oil and Gas Operations Act
Canada Petroleum Resources Act
Canadian Environmental Assessment Act
Energy Administration Act
Mackenzie Valley Resources Management Act, c.25
Northern Pipeline Act

Regulations and Orders Pursuant to the NEB Act

Gas Pipeline Uniform Accounting Regulations
National Energy Board Act Part VI (Oil and Gas) Regulations
Filing of Supply Information in Compliance with the Board's Part VI (Oil and Gas) Regulations
(16 May 1997)
National Energy Board Cost Recovery Regulations
National Energy Board Electricity Regulations
National Energy Board Export and Import Reporting Regulations

National Energy Board Order No. M0-62-69,
CRC, Vol. XI, c. 1055

*National Energy Board Pipeline Crossing Regulations:
Part I and Part II*

General Order No. 1 Respecting Standard
Conditions for Crossings by Pipelines,
(December 14, 1978)

General Order No. 2 Respecting Standard
Conditions for Crossings of Pipelines,
(December 14, 1978)

National Energy Board Rules of Practice and
Procedure, 1995

*National Energy Board Substituted Service
Regulations*

Oil Pipeline Uniform Accounting Regulations, CRC,
Vol. XI, c. 1058

Oil Product Designation Regulations

Onshore Pipeline Regulations, June 1999

Pipeline Arbitration Committee Procedure Rules,
1986

Power Line Crossing Regulations

Proclamation Extending the Application of Part
VI of the Act to Oil, May 7, 1970

Toll Information Regulations

Section 58 Streamlining Initiative - Order
XG/XO-100-94 Revision 1
(16 November 1995)

Guidelines and Memoranda of Guidance pursuant to the NEB Act

Adherence to Environmental Information
Requirements under the Board's Guidelines
for Filing Requirements (23 December 1997)

Filing of Supply Information in Compliance with
the Board's Part VI (Oil and Gas) Regulations
(16 May 1997)

Filing Procedures for Section 104 Right of entry
Order Applications (27 October 1999)

Financial Regulatory Audit Policy of the
National Energy Board (23 February 1999)

Guidance Notes for the *Onshore Pipeline
Regulations*, 1999 (7 September 1999)

Guidelines for Filing Requirements
(22 February 1995)

Guidelines for Negotiated Settlement of Traffic,
Tolls and Tariffs (23 August 1994)

Guidelines Respecting the Environmental
Information to be Filed by Applicants for
Authorization to Construct and Operate Gas
Processing and Straddle Plants, Liquid
Natural Gas (LNG) Plants and Terminals,
Natural Gas Liquids (NGL), Liquid Propane
Gas (LPG) and Butane Plants and Terminals,
under Part III of the National Energy Board
Act (26 June 1986)

Memorandum of Guidance - Concerning Full
Implementation of the September 1988
Canadian Electricity Policy (Revised
26 August 1998)

Memorandum of Guidance - Fair Market Access
Procedure for the Licensing of Long-term
Exports of Crude Oil and Equivalent
(17 December 1997)

Memorandum of Guidance - Regulation of
Group 2 Companies (6 December 1995)

Memorandum of Guidance - Retention of
Accounting Records by Group 1 Companies
Pursuant to Gas/Oil Pipeline Uniform
Accounting Regulations (30 November 1994)

Performance Measures filed as part of Year-end
Quarterly Surveillance Reports
(26 January 1996)

Regulations Pursuant to the COGO Act

Canada Oil and Gas Certificate of Fitness Regulations

Canada Oil and Gas Diving Regulations

Canada Oil and Gas Drilling Regulations

Guidance Notes for the Canada Oil and Gas
Drilling Regulations

*Canada Oil and Gas Geophysical Operations
Regulations*

Canada Oil and Gas Installations Regulations

Canada Oil and Gas Operations Regulations

Canada Oil and Gas Production and Conservation Regulations
Oil and Gas Spills and Debris Liability Regulations

Regulations Pursuant to the CPR Act

Frontier Lands Petroleum Royalty Regulations
Frontier Lands Registration Regulations
Guidance Notes for Applicant - Applications for Declaration of Significant Discovery and Commercial Discovery, January 1997

Regulations Pursuant to the CEA Act

Comprehensive Study List Regulations
Exclusion List Regulations
Federal Authorities Regulations
Inclusion List Regulations
Law List Regulations
Projects Outside Canada Environmental Assessment Regulations
Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements
Guide to the Preparation of a Comprehensive Study for Proponents and Responsible Authorities (May 1997)

Regulations Pursuant to the Canada Labour Code

Oil and Gas Occupational Safety and Health Regulations
Oil and Gas Occupational Safety and Health Guidance Notes (April 1992)
Safety and Health Committees and Representatives Regulations

Regulations Pursuant to the MVRM Act

Exemption List Regulations
Mackenzie Valley Land Use Regulations
Preliminary Screening Requirements Regulations
Environmental Impact Assessment in the Mackenzie Valley: Interim Guidelines

Regulations Pursuant to the Northern Pipeline Act

Northern Pipeline Notice of Objection Regulations
Northern Pipeline Socio-Economic and Environmental Terms and Conditions for Northern British Columbia
Northern Pipeline Socio-Economic and Environmental Terms and Conditions for Province of Alberta
Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the Province of Saskatchewan
Northern Pipeline Socio-Economic and Environmental Terms and Conditions for Southern British Columbia
Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the Swift River Portion of the Pipeline in the Province of British Columbia
Order Designating the Minister for International Trade as Minister for Purposes of the Act
Transfer of Duties, in Relation to the Pipeline, of Certain Ministers Under Certain Acts to the Member of the Queen's Privy Council for Canada Designated as Minister for Purposes of the Act

Transfer of Duties, in Relation to the Pipeline, of the National Energy Board Under Parts I, II and III of the Gas Pipeline Regulations to the designated Minister for Purposes of the Act

Transfer of Powers, Duties and Functions (Kluane National Park Reserve Lands) Order
Transfer of Powers, Duties and Functions (Territorial Lands) Order

Regulations Pursuant to the Territorial Lands Act

Canada Oil and Gas Land Regulations

Frontier Guidelines

Guidance Notes for Applicant. Applications for Declaration of Significant Discovery and Commercial Discovery. January 1997

Guidance Notes for the Canada Oil and Gas
Drilling Regulations

Offshore Waste Treatment Guidelines
(September 1996)

Guidelines Respecting Physical Environmental
Programs During Petroleum Drilling and
Production Activities on Frontier Lands
(April 1994)

The Board's Mandate

Supplement II

The Board's Strategic Plan



Purpose

We promote Safety, Environmental Protection and Economic Efficiency in the Canadian public interest while respecting individuals' rights and within the mandate set by Parliament in the regulation of pipelines, energy development and trade.

Vision

We will be a respected leader in safety, environmental and economic regulation.

Values

At the NEB, we are committed to realizing our Vision by:

- Building our relationships on trust, honesty and mutual respect
- Cooperating with each other in the greater interest of the organization
- Being responsible and accountable for our actions
- Recognizing and encouraging the efforts, achievements and ideas of others
- Promoting learning, innovation and creativity
- Being open to change that enables personal and organizational growth
- Taking actions and decisions that are fair, objective and respected

Goals

NEB-regulated facilities are safe and perceived to be safe

NEB-regulated facilities are built and operated in a manner that protects the environment and respects individuals' rights

Canadians derive the benefits of economic efficiency

Measures

- Maintain or improve safety performance as measured by key indicators
- Maintain or improve public confidence as measured by key indicators

- Maintain or improve environmental performance based on key indicators
- Maintain or improve performance of environmental assessment process and routing process based on key indicators

- Pipeline companies' and shipper representatives' satisfaction with the environment and processes created by the Board in which issues concerning increased competition and traffic, tolls and tariffs are resolved
- Shipper and pipeline company satisfaction with the level of pipeline tolls and with the range and choice of services
- Board Member and external party satisfaction with Board-produced information
- Maintain or improve key indicators of regulatory efficiency

Goals

The NEB meets the evolving needs of the public to engage in NEB matters

Measures

- Maintain or improve the level of public awareness of, and satisfaction with, the Board's information services and the assistance available to participants in the Board's regulatory proceedings
- Improve effective citizen engagement as measured by key indicators

Strategies

- Interact and communicate with the public to build confidence and understanding
- Collect and manage essential information
- Develop knowledge and skills and apply what we learn
- Focus efforts on results and explicitly assess risks and gaps

Supplement III Documents



Information Bulletins

The Board publishes information bulletins on the subjects listed below:

- Pipeline Route Approval Procedures
- The Public Hearing Process
- Non-Hearing Procedures
- How to Participate in a Public Hearing
- The Board's Publications
- Traffic, Tolls and Tariffs
- The National Energy Board Library
- Electricity
- Protection of the Environment
- Pipeline Tolls and Tariffs: A Compendium of Terms
- The Frontier Information Office
- Pipeline Safety
- Pipeline Regulation: An Overview for Landowners and Tenants

Major Documents Published in 1999

Pipeline Facilities

Maritimes & Northeast Pipeline
Management Ltd.
Point Tupper lateral facilities, GH-4-98
Reasons for Decision, January 1999

Maritimes & Northeast Pipeline
Management Ltd.
Detailed Route, MH-3-98
Decision dated 26 January 1999 on Route
Objections by

- Mr. Franklin Irving
- Mr. William MacDonald

Vector Pipeline Limited Partnership
Natural Gas Pipeline, GH-5-98
Reasons for Decision, March 1999

Alliance Pipeline Ltd.
Detailed Route, MH-1-99
Decision dated 5 May 1999 on Route
Objections by

- Alex and Mary Banga
- Mr. Paul Vincent Dyke
- Ms. Katherine Murphy O'Flynn

Decision dated 18 May 1999 on Route
Objection by

- John and Linda Irving

Decisions dated 28 May 1999 on Route
Objections by

- Ms. Margaret Cook
- Mr. Vernon Tymkow,

Alliance Pipeline Ltd.
Detailed Route, MH-2-99
Decisions dated 20 July 1999 on Route
Objections by

- Mr. Bryan Ellingson
- Lloyd & Katherine Olley
- Dale & Gwen Smith

Decisions dated 29 July 1999 on Route
Objections by

- Don and Linda Liland,
- Franklin and Joan Moller,
- Brian and Teresa Fast
- Peter and Levke Eggers

Maritimes & Northeast Pipeline
Management Ltd.
Halifax Lateral Pipeline Project, GH-2-99
Comprehensive Study Report, July 1999

Maritimes & Northeast Pipeline
Management Ltd.
Halifax lateral facilities, GH-2-99
Reasons for Decision, October 1999

Maritimes & Northeast Pipeline
Management Ltd.
Saint John lateral facilities, GH-4-99
Reasons for Decision, November 1999

Maritimes & Northeast Pipeline
Management Ltd.
GC-95 satisfaction of condition no. 22,
GH-6-96
Letter Decisions, 17 & 21 December 1999

Tolls and Tarriffs

BC Gas Utility Ltd.
Access & Tolls, RH-2-98
Reasons for Decision, March 1999

Gas Exports

Enron Capital & Trade Resources Canada Corp.,
GHW-1-99
Letter Decision, 13 May 1999

Imperial Oil Resources Limited, GH-1-99
Reasons for Decision, June 1999

ProGas Limited, GHW-2-99
Letter Decision, 20 August 1999

Electricity Facilities

Canadian Niagara Power Company Limited
Rehabilitate an International Power Line,
Letter Decision, 14 May 1999

Ontario Hydro
Alterations to International Power Line L51D
Letter Decision, 21 May 1999

Electricity Exports

British Columbia Hydro and Power Authority
Letter Decision, 6 January 1999

Cominco Ltd.
Letter Decision, 25 January 1999

Duke Energy Marketing Canada Ltd.
Letter Decision, 26 January 1999

Marketing d'Énergie HQ Inc.
Letter Decision, 23 June 1998

Constellation Power Source, Inc.
Letter Decision, 10 September 1999

Bonneville Power Administration
Letter Decision, 27 September 1999

Canadian Niagara Power Company Limited
Letter Decision, 30 September 1999

Fraser Paper Inc. (Canada)
Letter Decision, 30 September 1999

Southern Company Energy Marketing L.P.
Letter Decision, 7 October 1999

Manitoba Hydro
Letter Decision, 16 December 1999

PG&E Energy Trading - Power L.P.
Letter Decision, 16 December 1999

New Brunswick Power Corporation
Letter Decision, 22 December 1999

Frontier

Inuvialuit Petroleum Corporation
Declaration of Commercial Discovery
Ikhil Gas Field
Letter Decision, 23 June 1999

Shiha Energy Transmission Ltd., MH-4-99
Pursuant to Section 58 of the NEB Act for the
Liard pipeline project.
Preliminary Question of Jurisdiction,
Decision from the Bench, 13 October 1999

Chevron Canada Resources
Development Plan for Liard K-29 Gas Well
pursuant to subsection 5.2(2) of COGO Act
Letter Decision, 24 December 1999

Regulatory

Onshore Pipeline Regulations, 1999
23 June, 1999

Guidance Notes for the Onshore Pipeline
Regulations, 1999
7 September 1999

Other

Regulatory Agenda - January, April, July and
October, 1999

National Energy Board, *1998 Annual Report*
April 1999

Annual Report Pursuant to *Access to Information*
Act and Privacy Act
1 April 1998 - 31 March 1999

Canadian Energy Supply and Demand to 2025
June 1999

Short-term Natural Gas Deliverability from the
Western Canada Sedimentary Basin 1998-
2001
September 1999

Natural Gas Resource Assessment Northeast
British Columbia - Working Document -
January 1994 (revised November 1999)



Supplement IV Legal Proceedings

Applicants

Rocky Mountain Ecosystem Coalition (RMEC)
(Application dated 17 September 1998)

(Applications served
11 January 1999)

Union Gas Limited v National Energy Board (Application dated 5 May 1998)

Alberta Department of Energy v Northstar Energy Corporation Ltd. (Application dated 25 May 1998)

Canadian Hunter Exploration Ltd. v National Energy Board et al (Application dated August 22, 1996)

Applications

National Energy Board

An application for review by the Board was filed by RMEC. The Applicant sought review of all of the Board's decisions as a responsible authority under the Canada Environmental Assessment Act in respect to the environmental scoping of the Alliance Pipeline Project.

Federal Court Trial Division

Two judicial review applications were filed; one seeking an order of mandamus in respect of the environmental assessment required under the Canadian Environmental Assessment Act and one seeking to quash the Board's decision on the basis of natural justice. A motion to dismiss both applications was heard on 5 July 1999.

Federal Court of Appeal

An application for judicial review was filed in the Federal Court of Appeal in which an order of mandamus was sought from the Court to compel the Board to provide additional reasons for its GH-1-97 Decision concerning tolling methodology for the Trans Québec & Maritimes Pipeline Inc. (TQM) - PNGTS Extension.

Federal Court of Appeal

An Application for Leave to Appeal a Board ruling on jurisdiction and a subsequent final decision of the Board which authorized Northstar Energy Corporation to construct and operate an extra-provincial pipeline was filed in 1998. The grounds for the application were that the Board had no jurisdiction to authorize a pipeline which extended slightly beyond the boundaries of the Province of Alberta.

Federal Court of Appeal

An Application for Leave to Appeal dated 22 August 1996 was lodged by Canadian Hunter Exploration Ltd. The application challenged a decision of the Board which granted a section 58 exemption order for the construction and operation of an extra-provincial pipeline but which also

Decisions

On 1 October 1998, the Board dismissed the application for review.

One application was dismissed as a result of the 5 July 1999 motion and the other directed to be transferred to the Federal Court of Appeal. This latter application was abandoned by the Applicant in November 1999.

On January 25, 1999 the application for judicial review was wholly discontinued without costs by Union Gas Limited.

The Federal Court granted the leave to appeal and stayed the Board's GH-1-98 Decision. An appeal was subsequently filed by the Province of Alberta. At the end of 1999 this appeal had not been heard.

The appeal was allowed and the order of the Board set aside.

directed that upstream facilities that were formerly under the jurisdiction of the Province be brought under the jurisdiction of the Board. Leave to Appeal was granted 6 November 1996 and an appeal was subsequently filed. The matter was set down for hearing in Vancouver for 15 March 1999.

*Alliance Pipeline Project -
Detailed Route Hearing -
MH-1-99 and MH-2-98 -
Mr. Vernon Smith*

National Energy Board

On 12 March 1999, the Board decided on its own motion to review its decision regarding Order GPL-A-159-2-99 dated 11 February 1999 approving some plans, profiles and books of reference for the Alliance Pipeline Project. The Board decided to review its decision because it inadvertently did not consider a proposed alternate route submitted by Mr. Vernon Smith in his objection received by the Board on 9 January 1999. This in the view of the Board raised a doubt as to the correctness of its decision in approving some plans, profiles and books of reference.

On 31 March 1999, the Board upheld its decision to approve the plans, profiles and books of reference in question.

The Board provided Alliance Pipeline Ltd., Mr. Vernon Smith and intervenors in Mr. Smith's upcoming detailed route hearing with the opportunity to file submissions in respect of the merits of the review.

*Maritimes & Northeast
Pipeline Management Ltd.
(M&NP) - Detailed Route
Hearing MH-3-98 -
Ms. Shelagh Lynch*

National Energy Board

On 4 February 1999, Ms. Shelagh Lynch applied for a review and stay of the Board's decision regarding the detailed route hearing the Board held in the matter of M&NP's pipeline in the Maritimes. During the MH-3-98 detailed route hearing, Ms. Lynch expressed concerns over the proximity of M&NP's proposed route to a wetland associated with a beaver pond on her property. Ms. Lynch proposed an alternate route which took the pipeline route outside the one kilometre wide corridor which was approved at the certificate hearing.

On 31 March 1999, the Board decided, after review of all submissions, that no prima facie case had been made to cast a doubt as to the correctness of the Board's findings in MH-3-98 decision. Therefore, the Board denied the application for review and stay of the MH-3-98 decision.

During the detailed route hearing, the Board heard Ms. Lynch's objection and listened to her evidence on the alternate route but approved the proposed detailed route of M&NP as being the best possible route. However, in its decision the Board required M&NP to prepare and file a site report of the beaver pond and surrounding area of the Lynch and Hughes/Morrigan properties to determine whether a wetland as described in the Environmental Impact Assessment was present. If a wetland were found to exist, M&NP was also required to provide a site specific monitoring and mitigation plan for the wetland. Both those reports were filed by M&NP.

British Columbia Wildlife Federation and The Steelhead Society of British Columbia v. British Columbia Hydro and Power Authority
(Application dated 4 February 1999)

The Applicants filed an application for leave to appeal the 6 January 1999 decision of the Board. Leave to appeal was granted and a Notice of Appeal served on the Board on 19 May 1999.

At the end of 1999 this case had yet to be heard by the Court.

Athabasca Chipewyan First Nation v. British Columbia Hydro and Power Authority
(Application dated 5 February 1999)

The Applicants filed an application for leave to appeal the 6 January 1999 decision of the Board. Leave to appeal was granted and a Notice of Appeal served on the Board on 1 June 1999.

At the end of 1999 this case had yet to be heard by the Court.

Vernon Smith v. Alliance Pipeline Limited and the National Energy Board
(Application served 4 May 1999)

An application for leave to appeal a letter decision of the Board dated 13 March 1999 was filed by the Applicant. A stay of the detailed route hearing was also sought pending the outcome of the appeal.

The application was discontinued by the Applicant in June 1999.

Union of Nova Scotia Indians et al v Maritimes and Northeast Pipeline Management Ltd. et al
(Application dated 16 November 1998)

Federal Court of Appeal

The Applicants filed an application for judicial review in respect of a decision of the Board which declared that Maritimes & Northeast Pipeline had satisfied a condition pertaining to aboriginal roles and responsibilities contained in a Certificate of Public Convenience and Necessity issued to the company.

The Court quashed the Board decision in its judgment rendered 20 October 1999.

On 19 November 1998, the Applicants filed a motion for an Order deeming the judicial review application to be an Application for Leave to Appeal. On 22 February 1999 the Court decided that the application for judicial review was properly filed because the Union of Nova Scotia Indians was not a party to the proceeding which resulted in the decision of the Board concerning the satisfaction of Condition No. 22 of Certificate GC-95. As a result, the Union of Nova Scotia Indians lacked standing to appeal the Board decision. The case was heard in Ottawa on 19 and 20 October 1999.

Maritimes & Northeast Pipeline Management Ltd. et al v. Union of Nova Scotia Indians et al
(Application dated 21 April 1999)

Supreme Court of Canada

Maritimes & Northeast Pipeline filed an application for leave to appeal from the 22 February 1999 decision of the Federal Court of Appeal which confirmed the validity of the application for judicial review filed by the Union of Nova Scotia Indians.

At the end of 1999 this application had yet to be heard by the Court.

Alliance Pipeline Ltd. - Mr. Joe and Ms Lil Brokenfohr - Right of Entry Orders (Filed 3200-A159-1-16 and 3200-A159-1-17

National Energy Board

On 17 September 1999, the Board denied requests for review filed by counsel for Mr. Joe and Ms. Lil Brokenfohr of the Board's decision of 16 July 1999 regarding certain right of entry (ROE) orders with respect to the Alliance Pipeline Project.

On 26 August 1999, the Board decided to seek comments from the parties on whether counsel for the Brokenfohrs application for

On 30 June 1999, the Board issued ROE orders for the properties of Joe Bokenfohr and Joe and Lil Bokenfohr, two different but adjacent tracts. The Board, in reaching its decision to issue ROE orders, inadvertently overlooked a letter from Mr. Bokenfohr. As a result, on 6 July 1999, the Board decided to conduct a review of its original decision and wrote to Alliance asking for its submissions in relation to the letter of Mr. Bokenfohr and as well its affidavits of service in relation to the lands in question for its sections 87 and 34 notices. Mr. Bokenfohr was then given until 8 July 1999 to file a response.

The Board considered the applications of Alliance for the ROE orders and the submissions of Mr. Bokenfohr. On 16 July 1999, the Board determined it was proper and in the public interest to grant the ROE orders in relation to the properties in question. It affirmed the original orders and lifted the stay of those orders imposed on 6 July 1999.

By letter dated 3 August 1999, counsel for the Bokenfohrs requested that the Board "review and amend the Bokenfohr right of entry orders to reflect a schedule such as that which Alliance has agreed to in its other applications where I have filed objections." In a letter dated 23 August 1999, counsel for the Bokenfohrs wrote to the Board respecting the problems arising from the construction of the right of way on Mr. Bokenfohr's land and declared that "One thing the Board ought to do immediately in Mr. Bokenfohr's case is amend the right of entry order to get rid of the two year 'temporary' classification of working area where much of the damage has been done. Alliance should be responsible for this area indefinitely."

review of 3 August 1999 and the reference to an amendment to the ROE orders in the 23 August 1999 letter raised a doubt as to the correctness of the Board's 16 July 1999 decision. In September the Board dismissed the review application but directed that an erratum issue in respect of the original order.

*Assembly of Nova Scotia
Mi'kmaq Chiefs, Union of
Nova Scotia Indians and the
Confederacy of Mainline
Mi'kmaq (NSMC et al) -
Maritimes & Northeast
Pipeline Management
Ltd. - Halifax Lateral (File
3200-M124-3*

National Energy Board

On 12 November 1999, the NSMC et al. requested that the Board review its decision in respect of Conditions 20 and 21 of the proposed certificate for the construction of the Halifax Lateral.

Condition 20 of the Halifax Lateral certificate concerns negotiations between M&NP and the Assembly of Nova Scotia Mi'kmaq Chiefs regarding the process for consultations and input of the Assembly with respect to the construction of the project. Counsel for the NSMC et al. was concerned about the wording "construction of the project" in Condition 20 and questioned whether the omission of "the pipeline construction and operation" in the certificate was inadvertent.

As a result of the matters outlined above, the Board decided that it was not prepared to proceed with the request for a review.

However, since the Board has not made any substantive decision regarding the application, should the NSMC et al. decide to re-file a request for review in accordance with section 44 of the Rules, the Board would be willing to consider the application at that time.

Counsel for the NSMC et al. was also concerned that the time allotted for good faith negotiations to take place was too short.

On 23 November 1999, the Board advised the NSMC et al. that it had re-designated the original hearing panel and referred to that panel for its review the NSMC et al. suggestion that the Board's limited terminology in Condition 20 may have been inadvertent. The panel reported to the Board that the omission from Condition 20 of the words "operation and decommissioning" was not inadvertent.

On the same date, the Board also advised the NSMC et al. that in their submission the Board noted that it appears that they may have other submissions in regard to Condition 20 and they had not made any submissions in the text of their letter on Condition 21. The Board stated that it was unclear as to whether or not the NSMC et al. were requesting a review of Condition 21. The Board further noted that the application for review is not in conformity with section 44 of the National Energy Board Rules of Practice and Procedure, 1995 (the Rules) which sets out the requirements for an application for review pursuant to subsection 21(1) of the NEB Act.

*Heartland Resources Inc.
(Heartland) - Mobil Oil
Canada Ltd. (Mobil) -
Goldboro Gas Plant (File
3200-M122-1-1*

National Energy Board

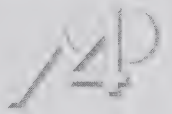
On 30 November 1999, the Board dismissed an application from Heartland seeking a review of Mobil's application dated 15 January 1998 and the Board's decision regarding an exemption from filing the Plan, Profile and Book of Reference regarding the construction of the slugcatcher and the gas plant at Goldboro, Nova Scotia. The exemption had the effect of allowing the construction of the project without the necessity of a detailed route hearing process.

In its application, Heartland stated that by virtue of its mineral exploration licence it had an interest in the subject lands, but had not received notice of the application for exemption. Heartland's position was that Mobil's failure to give notice, deprived Heartland of its rights under the National Energy Board Act.

The Board noted that Heartland has not previously sought a review or any other remedy from the Board either before or during construction, despite being aware of the intended location of the plant since 17 March 1998. Mobil has acted on the order and has completed its project. Therefore, the Board was of the view that the questions raised in Heartland's application had been rendered moot by the passage of time and the construction of the gas plant. As a result, the Board has decided to dismiss Heartland's application for review.

Supplement V

Companies Regulated by the NEB



The following is a list of the pipeline companies and electric power entities which own or operate interprovincial or international pipelines or power lines under the Board's jurisdiction. The pipeline companies have been divided into two groups. Group 1 Gas and Oil Pipelines are the major pipeline companies which are subject to active regulatory oversight by the National Energy Board. Group 2 consists of all other pipeline companies under the Board's jurisdiction.

For purposes of cost recovery, there are three classifications: large, intermediate and small. The criteria for determining a company's classification is based on its size, throughput and cost of service.

Group 1 Gas Pipelines

TransCanada PipeLines Limited, B.C. System
Alliance Pipeline Ltd.
Foothills Pipe Lines Ltd.
Maritimes and Northeast Pipeline Management Ltd.
TransCanada PipeLines Limited
Trans Québec & Maritimes Pipeline Inc.
Westcoast Energy Inc.

Group 1 Oil and Products Pipelines

Cochin Pipe Lines Ltd.
Enbridge Pipelines Inc. (formerly Interprovincial Pipe Line Ltd.)
Enbridge Pipelines (NW) Inc. (formerly Interprovincial Pipe Line (NW) Ltd.)
Trans Mountain Pipe Line Company Ltd.
Trans-Northern Pipelines Inc.

Group 2 Gas Pipelines

AEC Suffield Gas Pipeline Inc.
Bellator Exploration Inc.
Burlington Resources Canada Energy Ltd.
Canadian Hunter Exploration Ltd.
Canadian-Montana Pipe Line Company
Canadian Natural Resources Ltd.
Canor Energy Ltd.
Centra Transmission Holdings Inc.
Champion Pipe Line Corporation Limited
Chauvco Resources Ltd
Chief Mountain Gas Co-op Ltd.
Consumers' Gas (Canada) Limited
Cube Energy Corp.
Devon Energy Corp.
ELAN Energy Inc.
Fletcher Challenge Energy Canada Inc.
Forty Mile Gas Co-op Ltd.
Gibson Petroleum Co. Ltd.
Huntingdon International Pipeline Corporation
Husky Oil Operations Ltd.
Interenergy Sheffield Processing Company (Canada) Ltd.
Many Islands Pipe Lines (Canada) Limited
Mid-Continent Pipelines Limited
Minell Pipeline Ltd.
Mobil Oil Canada Ltd.
Murphy Oil Company Ltd. (gas and oil pipelines)
Niagara Gas Transmission Limited
Northstar Energy Corporation
Novagas Canada Pipelines Ltd. (formerly Novagas Clearinghouse Pipelines Ltd.)

Olympia Energy Inc.
Peace River Transmission Company Limited
Penn West Petroleum Ltd.
Petrorep Resources Ltd.
Portal Municipal Gas Company Canada Inc.
Quest Oil and Gas Ltd.
Renaissance Energy Ltd. (gas and oil pipelines)
Revenue Canada Customs and Excise
Rigel Oil and Gas Ltd.
St. Clair Pipelines Ltd.
Stampeder Exploration Ltd.
Suprex Energy Corporation
Talisman Energy Inc.
Tidal Resources Inc.
Union Gas Limited
Wascana Energy Inc.
177293 Canada Ltd.
661151 Alberta Ltd.

Group 2 Oil and Products Pipelines

Amoco Canada Petroleum Company Ltd.
Aurora Pipe Line Company
Dome Kerrobert Pipeline Ltd. and Pan Canadian
Kerrobert Pipeline Ltd.
Dome NGL Pipeline Ltd.
Dome NGL Pipeline Ltd. and Amoco Canada
Petroleum Company Ltd.
Enbridge Pipelines (Westpur) Inc. (formerly
Westspur Pipe Line Company Inc.)
Ethane Shippers Joint Venture
Express Pipeline Ltd.
Federated Pipe Lines (Northern) Ltd.
Genesis Pipeline Canada Ltd.
Husky Oil Operations Ltd.
Imperial Oil Resources Limited
ISH Energy Ltd.
Joint Ventures of the Bi-Provincial Upgrader
Manito Pipelines Ltd.
Montreal Pipe Line Limited
Nevis Ltd.

Northwest Transmission Company Limited
Novacor Chemicals (Canada) Ltd.
Petroleum Transmission Company
Pioneer Natural Resources Canada Inc.
Pouce Coupé, Pipe Line Ltd.
PrimeWest Energy Inc.
Rigel Oil and Gas Ltd.
SCL Pipeline Inc.
Sun-Canadian Pipe Line Company Limited
Wascana Pipe Line Ltd.

Commodity Pipelines

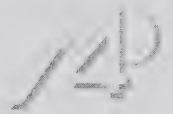
E. B. Eddy Forest Products Ltd.
Fraser Inc.
Genesis Pipeline Canada Ltd.
Penn West Petroleum Ltd.
Souris Valley Pipeline Limited
Stone Consolidated Corporation

Electric Power Utilities and Others

British Columbia Hydro and Power Authority
Canadian Niagara Power Inc.
The Canadian Transit Company
Cominco Ltd
Cornwall Electric
The Detroit and Windsor Subway Company
Farms (including cottage and isolated loads)
Fraser Paper Inc.(Canada)
Hydro-Québec
Lac La Croix Power Authority
Maine and New Brunswick: Electrical Power Co.
Manitoba Hydro
New Brunswick Power Corporation
Ontario Hydro Company Services Inc.
Ontario Power Generation Inc.
PDI Canada Inc.
Roseau Electric Cooperative Inc.
Saskatchewan Power Corporation
St. Clair Tunnel Company
Stone-Consolidated Corporation
West Kootenay Power Ltd.

Supplement VI

Cooperation with Other Organizations



The Board cooperates with other agencies, to reduce regulatory overlap and provide more efficient regulatory services. In addition, the Board provides assistance to other countries who seek to benefit from the Board's long experience and success as a leading regulatory agency.

Natural Resources Canada (NRCan)

In 1996, the Board signed a Memorandum of Understanding (MOU) with NRCan to reduce duplication and increase cooperation between the agencies. This MOU covers items such as data collection, the enhancement of energy models and special studies. The MOU was renewed in January 2000.

Canadian Environmental Assessment Agency (CEAA)

The Board has been working with the CEAA over the past year to develop a new process to reduce regulatory uncertainty for projects requiring a Comprehensive Study Report. Two pilot projects were undertaken using the new process, and further public consultation is expected in the coming year.

Northern Pipeline Agency (NPA)

The Board provides technical and administrative assistance to the NPA, which, pursuant to the *Northern Pipeline Act*, has primary responsibility for overseeing the planning and construction of the Canadian portion of the proposed Alaska Natural Gas Transportation System by Foothills Pipe Lines Ltd.. Mr. Kenneth W. Vollman, Chairman, serves as Administrator and Designated Officer of the NPA.

Transportation Safety Board of Canada (TSB)

While the Board has exclusive responsibility for regulating the safety of oil and gas pipelines under federal jurisdiction, it shares the responsibility for investigating pipeline incidents with the TSB. The roles and responsibilities of each body with regard to pipeline accident investigations are outlined in a MOU between the two Boards.

Yukon Territory Department of Economic Development (DED)

The Board continues to work with Yukon officials to facilitate the transfer of oil and gas regulatory responsibilities in accordance with the Yukon Accord Implementation Agreement. The Board provides expert technical advice to the DED.

Alberta Energy and Utilities Board (AEUB)

The Board has an MOU with the AEUB on Pipeline Incident Response. The agreement provides for mutual assistance and a faster and more effective response by both boards to pipeline incidents in Alberta.

During 1999, the Board continued its involvement in a Pipeline Task Force with the AEUB. The purpose of this task force is to develop consistent and compatible regulatory requirements. It is expected that this process will result in more efficient use of organizational resources, leading to a reduced regulatory burden on both the pipeline industry and the public.

The Board and the AEUB maintained their commitment to using the common reserves database

for oil and gas reserves in Alberta. Both Boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for cooperation.

Canada-Newfoundland Offshore Petroleum Board (C-NOPB) and Canada-Nova Scotia Offshore Petroleum Board (CNSOPB)

The Chairs of the NEB, the C-NOPB, and the CNSOPB together with executives from Newfoundland and Nova Scotia Departments of Energy and NRCan, form the Oil and Gas Administrators Advisory Council (OGAAC). The OGAAC membership discuss and decide on horizontal issues affecting their respective organizations to ensure harmonization and a common approach on oil and gas exploration and production issues across Canada. The NEB, C-NOPB, and CNSOPB staff also work together to review, update and amend regulations and guidelines affecting oil and gas activities on Accord Lands.

The NEB's staff also provides technical expertise to NRCan, C-NOPB, and CNSOPB on technical matters of mutual interest, such as reservoir assessment, occupational safety and health, diving, drilling and production activities. Two CNSOPB staff also served as NEB Inspection Officers during the construction of the offshore portion of the Sable Offshore Energy Project pipeline from the Thebaud platform to the Goldboro gas plant.

Human Resources Development Canada (HRDC)

The Board has an MOU with HRDC to administer the Canada Labour Code for NEB-regulated facilities and activities and to coordinate these safety responsibilities under the COGO Act and the NEB Act.

Ontario Energy Board (OEB)

The Board is continuing joint development of its ERF initiative with the OEB and key participants from the regulatory community. This joint devel-

opment will ensure that regulatory participants who deal with both Boards will see a consistent approach in the electronic filing and retrieval of regulatory documents.

Saskatchewan Department of Energy and Mines (SEM)

The Board and the SEM have worked together on some resource issues, but a formal agreement has not been signed.

Nova Scotia and Newfoundland

The Board has an MOU with NRCan by which the Board provides advice and assistance to NRCan and the provinces of Newfoundland and Nova Scotia in drafting federal and provincial versions of regulations which pertain to the offshore areas under joint resource management accords.

British Columbia Ministry of Energy and Mines (MEM)

The Board and MEM maintained their commitment to using a common reserves database for oil and gas reserves in British Columbia. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for cooperation.

Canadian Association of Members of Public Utility Tribunals (CAMPUT)

During 1999, Board members and staff played a leading role in organizing and speaking at CAMPUT conferences, including the forthcoming May 2000 International Forum on Energy Regulation. Members and staff also sat on the executive committee of the Association, promoting the education and training of members and staff of public utility tribunals.

National Association of Regulatory Utility Commissioners (NARUC)

Board members regularly participate in meetings of the U.S. NARUC, particularly with respect to

developments in U.S. gas markets that may affect cross-border trade in natural gas.

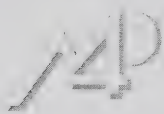
Cooperation with Other Countries

During 1999, the Board cooperated with several foreign countries by providing information on the Board's regulatory role and other energy-related matters. Consultations were held with the U.S. Federal Energy Regulatory Commission and the Comisión Reguladora de Energía of Mexico, as well as with visiting officials from Australia, China, Columbia, England, Japan, Peru and Russia.

The Board also participated in a World Bank seminar on regulation and on the Energy

Regulators Forum within the Asia Pacific Economic Cooperation initiative, comprised of 18 member countries on the Pacific Rim dedicated to improving economic ties.

The Board participated in a project with the Canadian Institute of Resources Law which worked on the revision of oil and natural gas reserves definitions in the Federation of Russia. There is a desire within Russia to more closely align the Russian definitions and methodologies with the common practices of the west, Canada and the United States in particular. This work continues.



Supplement VII

List of Appendices

The following Statistical Reports are published separately as Appendices to the *Annual Report*. Electronic copies can be found on the Board's Web site and printed versions are available from the Publications Office call (403) 299-3562 or 1-800-899-1265, send a facsimile to (403) 292-5503 or visit the Board's Web site (www.neb.gc.ca).

Appendix A

- A1 Crude Oil and Equivalent Supply and Disposition
- A2 Estimated Established Reserves of Crude Oil and Bitumen at 31 December 1998
- A3 Natural Gas Supply and Disposition
- A4 Estimated Established Reserves of Marketable Natural Gas at 31 December 1998
- A5 Natural Gas Liquids Supply and Disposition
- A6 Geophysical Activity
- A7 Exploration and Development Expenditures
- A8 Sales of Exploration Rights in Western Canada
- A9 Sales of Exploration Rights in Frontier Regions
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- B1 Orders Issued During 1999 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length
- B2 Exports of Canadian Crude Oil and Equivalent - 1998 and 1999

- B3 Exports of Canadian Crude Oil and Equivalent - 1995 to 1999
- B4 Exports of Petroleum Products by Month - 1999
- B5 Exports of Petroleum Products by Company - 1998 and 1999

Appendix C

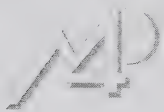
- C1 Certificates Issued During 1999 Approving the Construction of New Gas Pipelines Exceeding 40 Kilometres in Length
- C2 Orders Issued During 1999 Approving Gas Pipeline Construction not Exceeding 40 Kilometres in Length
- C3 Licences and Long-Term Orders to Export Natural Gas as at 31 December 1999
- C4 Licences and Long-Term Orders to Import Natural Gas as at 31 December 1999
- C5 Natural Gas Exports by Export Point, 1995 to 1999
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- D1 Financial Information - Group 1 Oil Pipeline Companies with Multi-year Incentive Toll Agreements
- D2 Financial Information - Group 1 Oil Pipelines with Tolls based on Cost of Service
- D3 Financial Information - Group 1 Gas Pipeline Companies

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| E2 | Amending Orders Issued During 1999 for International Power Lines | E6 | Electricity Exports - 1999 |
| E3 | Revoking Orders Issued During 1999 for International Power Lines | E7 | Electricity Trade Between Canada and the United States - 1999 (by Province) |
| E4 | Licences Issued During 1999 for the Export of Electricity | E8 | Electricity Trade between Canada and the United States - 1999 (by American Region/State) |



Supplement VIII

Metric Conversion Table

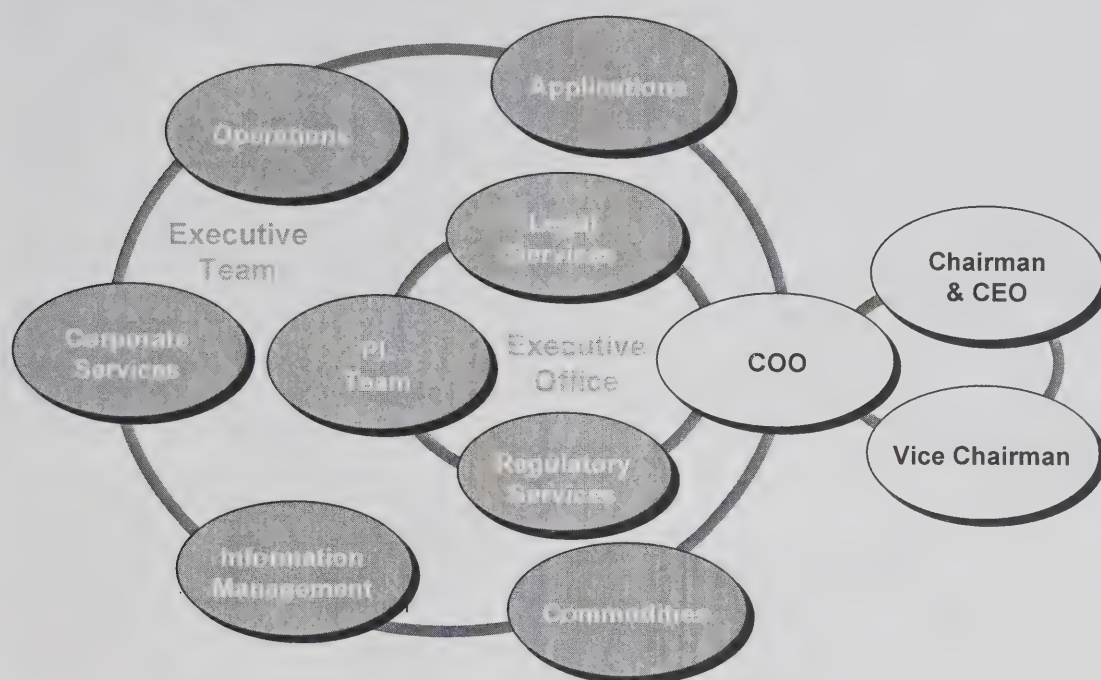
The Board uses the International System of Units. The energy content of a 30-litre tank of gasoline is approximately one gigajoule. A petajoule is one million gigajoules. On average, Canada consumes about one petajoule of energy for all uses (heat, light and transportation) every 50 minutes.

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

Approximate Conversion Factor

metre	=	3.28 feet
kilometre	=	0.62 mile
hectare	=	2.47 acres
cubic metre of oil	=	6.3 barrels
cubic metre of natural gas	=	35.3 cubic feet
gigajoule	=	0.95 thousand cubic feet of natural gas at 1 000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
gigajoule	=	10^9 joules
petajoule	=	10^{15} joules
gigawatt hour	=	10^6 kilowatt hours
terawatt hour	=	10^9 kilowatt hours

NEB Organization



Senior Board Staff

Gaétan Caron	Chief Operating Officer
Judith Hanebury	General Counsel
Brenda Kenny	Business Leader, Applications
Terrance Rochefort	Business Leader, Commodities
John McCarthy	Business Leader, Operations
Byron Goodall	Business Leader, Information Management
Valerie Katarey	Business Leader, Corporate Services
Michel Mantha	Secretary of the Board
Glenn Booth	Professional Leader, Economics
Bonnie Gray	Professional Leader, Environment
Frank Gareau	Professional Leader, Engineering

Business Unit Responsibilities

The Board is structured into five business units, reflecting major areas of activity: Applications, Operations, Commodities, Information Management and Corporate Services. Three other units, Legal Services, Professional Leadership and Regulatory Services provide specialized services to the five business units.

Unit Descriptions

Applications

The Applications Business Unit is responsible for the processing and assessment of regulatory applications submitted under the NEB Act. These fall primarily under Parts III, IV and VI of the Act, corresponding to facilities, tolls and tariffs and export applications. The Applications Unit is also responsible for the financial surveillance and audits of NEB-regulated pipelines. The Business Leader of Applications is accountable for this Unit.

Commodities

The Commodities Business Unit is responsible for assisting the Board in fulfilling its mandate through energy industry and marketplace surveillance, including the outlook for the demand and supply of energy commodities in Canada, the updating of guidelines, and regulations relating to energy exports as prescribed by Part VI of the NEB Act. It is also responsible for the disposition of applications for short-term exports of gas, oil and natural gas liquids, imports of natural gas and the disposition of applications concerning electricity exports and international power lines. The Business Leader of Commodities is accountable for this Unit.

Operations

The Operations Business Unit is accountable for safety and environmental matters pertaining to facilities under the NEB Act, the COGO Act and the CPR Act. It conducts safety and environmental inspections and audits, investigates accidents, monitors emergency response procedures, regulates the development of hydrocarbon resources in non-accord frontier lands, and develops regulations and guidelines with respect to the above. The Business Leader of Operations is accountable for this Unit.

Corporate Services

The Corporate Services Business Unit is responsible for providing those services necessary to

assist the Board in its management of human, material and financial resources. The Business Leader of Corporate Services is accountable for this Unit.

Information Management

The Information Management Business Unit is responsible for developing and implementing an information management strategy for the Board and disseminates the information required by external stakeholders. The Business Leader of Information Management is accountable for this Unit.

Legal Services

The Legal Services Team provides legal advice for both regulatory and management purposes. General Counsel is accountable for this Team.

Professional Leadership Team

The Professional Leadership Team has the responsibility for maintaining and enhancing technical expertise within the Board in the economic, environment, and engineering fields. Each of the three leaders is accountable for his or her respective professional field.

Regulatory Services

The Regulatory Services Team provides high-level administrative and regulatory support. The Secretary of the Board is accountable for this Team.



Kenneth W. Vollman, Chairman

Mr. Vollman has spent his entire career in the energy field. He moved from the private sector to the Board in 1973 and worked in a variety of increasingly responsible staff and management positions. He was designated as Chairman in 1998 after serving as a Member and Vice-Chairman.

Mr. Vollman holds a Master of Science degree in Mechanical Engineering from the University of Saskatchewan.



Judith A. Snider, Vice-Chairman

Ms. Snider has held positions at the law firms of Macleod Dixon and Code Hunter, joining the partnership of the latter in 1987. In 1992, she became General Counsel of the Board.

Ms. Snider holds a Bachelor of Science degree in Mathematics from Carleton University and a Bachelor of Laws degree from the University of Calgary. She is a member of the Alberta bar.

- On 3 December 1999, Kenneth W. Vollman was re-appointed as Chairman of the Board for a seven-year term.
- On 29 July 1999, Judith A. Snider was appointed Vice-Chairman of the Board.
- On 26 January 1999, Jean-Paul Théoret was appointed a Member for a term of seven years.
- On 29 July 1999, Elizabeth Quarshie, Deborah W. Emes and Carmen L. Dybwad, were appointed Members for a term of seven years.
- On 31 March 1999, Anita Côté-Verhaaf retired from the Board.
- On 28 May 1999, Diana Valiela resigned from the Board.
- C. Mervin Ozirny was reappointed temporary Board Member until 30 November 1999. Mr. Ozirny had been a temporary Board Member since 31 October 1997.
- On 8 December 1999, Henry A. Regier was appointed a temporary Board Member for the Joint Panel Review of the Canadian Millennium Pipeline Project.
- On 25 May 1999, Paul Trudel was appointed a temporary Board Member for a period of 60 days.
- On 27 August 1999, Gaétan Caron completed a two-year term as a temporary Board Member



Rowland J. Harrison

Mr. Harrison has extensive experience as an advisor on energy regulation to provincial, territorial, federal and foreign governments. He has been Professor of Law at the University of Ottawa, Dalhousie University, the University of Calgary and the University of Alberta. Most recently, he was a partner in the Calgary office of Stikeman, Elliott, a national and international Canadian law firm.

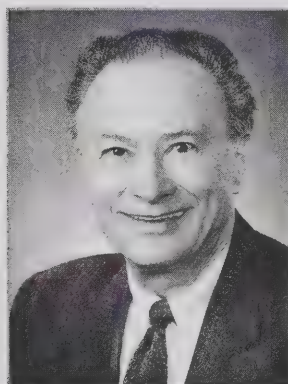
Mr. Harrison holds a Bachelor of Laws Degree from the University of Tasmania, Australia and a Master of Laws degree from the University of Alberta. He is a member of the bars of Nova Scotia, Ontario and Alberta.



John S. Bulger

Dr. Bulger held the position of Senior Manager, Regulatory Affairs, at Maritimes and Northeast Pipeline in Halifax, Nova Scotia. From 1995 to 1997, he worked as a private consultant on key energy issues in Canada and abroad. Prior to 1995, he held positions with Gaz Métropolitain and DuPont of Canada in Montreal.

Dr. Bulger received his Bachelor of Science from McGill University and his Ph.D. in Physical Chemistry from York University. He holds a graduate diploma in Business from McGill University.



Jean-Paul Théorêt

Since 1990, Mr. Théorêt had been a Commissioner of the Régie de l'énergie, previously the Régie du gaz naturel du Québec. From 1985 to 1989, he was also a Member of the National Assembly, Parliamentary Assistant to the Minister of Industry, Trade and Technology and Vice-Chairman of the Committee on Labour and the Economy in the National Assembly.

Mr. Théorêt studied economics at Cornell University and law at the University of Montreal.



Elizabeth (Liz) Quarshie

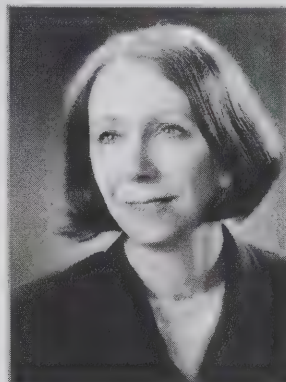
Ms. Quarshie held various senior management positions at Cogema Resources, Inc. in Saskatoon, Saskatchewan. Her last position was Director of Compliance, Audit and Evaluation.

Ms. Quarshie holds a graduate degree in Environmental Engineering from Washington State University and is a Member of the Association of Professional Engineers and Geoscientists of Saskatchewan. In addition, she is a Certified Professional Environmental Auditor.

Deborah W. Emes

Ms. Emes was Manager, Strategic Services for the British Columbia Utilities Commission, where she worked from 1990 to 1999. Prior to joining the BCUC, she held positions as an economist in both the private and public sectors.

Ms. Emes received her Bachelor of Arts degree in Economics from the University of Saskatchewan and her Master of Arts degree in Economics from the University of Calgary. In addition, she is a Chartered Financial Analyst.



Carmen L. Dybwad

Dr. Dybwad has held several senior positions with both the Saskatchewan Power Corporation and the Government of Saskatchewan. Most recently she was an assistant professor at the University of Regina where she taught economics and public administration.

Dr. Dybwad holds a Ph.D. in Planning from the University of Waterloo and a Master of Arts and Bachelor of Arts degrees in Economics from the University of Regina.



Anita Côté-Verhaaf

Mrs. Côté-Verhaaf held various positions at Gaz Métropolitain, Inc., the last of which was Executive Advisor, Regulatory Affairs. Previously she held positions at Lavalin-Econosult inc., and the Research Centre for Economic Development at the University of Montreal.

Mrs. Côté-Verhaaf earned her Master of Science degree in Economics at the University of Montreal.

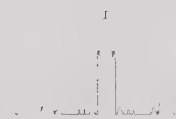


Diana Valiela

Dr. Valiela had extensive experience in ecology and specialized expertise in environmental and natural resources law. Prior to joining the Board, she practiced law with the firm of Lawson Lundell Lawson & McIntosh. Previously, she was the owner and manager of an environmental science and management consulting firm, and head of the Environmental Quality Objectives Division in Environment Canada's Pacific and Yukon Regional Offices.

Dr. Valiela earned her Bachelor of Arts in Biological Sciences from Rutgers University, a Master's and Ph.D. in Zoology from Duke University, and a Bachelor of Laws degree from the University of British Columbia.







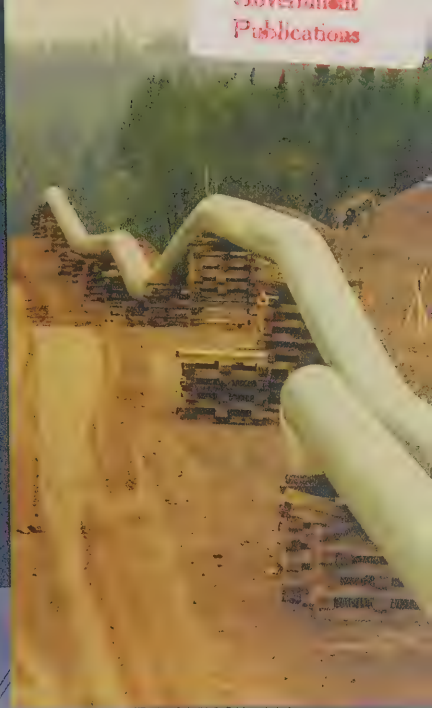
National Energy
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Annual Report to Parliament

2000



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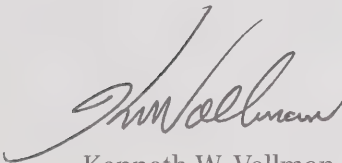
17 March 2001

The Honourable Ralph Goodale, P.C., M.P.
Minister of Natural Resources Canada
580 Booth Street, 21st Floor
Ottawa, Ontario
K1A 0E4

Dear Minister:

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 2000, in accordance with the provisions of Section 133 of the *National Energy Board Act*, R.S.C 1985, c. N-7.

Yours truly,



Kenneth W. Vollman
Chairman

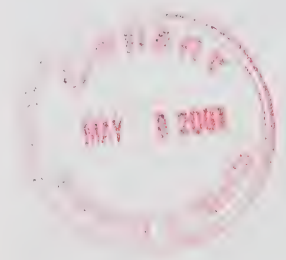


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Our Goals:

NEB-regulated facilities are safe and perceived to be safe.

NEB-regulated facilities are built and operated in a manner that protects the environment and respects individuals' rights.

Canadians derive the benefits of economic efficiency.

The NEB meets the evolving needs of the public to engage in NEB matters.



Chairman's Letter

I believe that history will show the year 2000 to be a turning point in the Canadian energy market environment. Perhaps the most significant event has been the increase in the price of energy over the past year. With their home heating and transportation costs on the rise, Canadians naturally focussed their attention on the energy sector and the role the National Energy Board plays to protect their interests.

Since the deregulation of energy markets in the mid-1980s, prices for natural gas and oil have been generally low. However, sustained economic growth over the last seven years fuelled energy demand, while low prices did not support the development of new supplies. The consequences hit North America at the end of the millennium, particularly in the natural gas market.

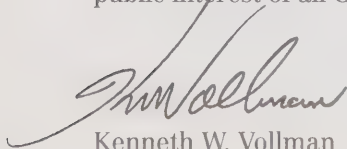
The Board recognizes that the rapid increase in natural gas prices is causing considerable difficulties for many Canadian businesses and consumers. At the same time, higher prices are sending an important signal to the producing sector to develop new supplies and to gas users to utilize available supplies as efficiently as possible. The Board is closely monitoring energy markets and published two reports on natural gas markets in 2000.

The Board regulates interprovincial and international oil and natural gas pipeline systems. New natural gas pipelines, approved by the Board in recent years, resulted in a significant increase in pipeline capacity in 2000. Buyers and producers now have additional capacity and flexibility to move required natural gas supplies to end-users.

Canadians expect pipelines to be safe. The record shows that pipelines are very safe, especially compared with other forms of transportation. The reduced number of pipeline incidents and very low number of ruptures show that pipelines are getting even safer. In the Board's view, however, even one pipeline rupture is too many. By promoting the use by regulated companies of goal-oriented safety management systems, we are seeing increased industry ownership of safety performance and, as a result, continuous improvements in safety performance itself.

Environmental excellence is much harder to demonstrate than safety. We believe that the overall environmental record of federal pipelines is good. However, we also know that protecting the environment is a goal that we must continually monitor and enhance over the longer term. During 2000, the Board laid the groundwork for new environmental management systems and performance indicators that will provide concrete results in the future.

The activities and results outlined in this Annual Report demonstrate the NEB's solid progress toward achieving its goals and fulfilling its mandate to act in the public interest of all Canadians.



Kenneth W. Vollman

Operating Context

The National Energy Board (NEB or the Board) is an independent tribunal that regulates several aspects of the energy industry. In fulfilling its mandate, it must fully understand the changing context in which it operates. Most significant of these in recent years are widespread changes in energy markets and the increasing expectation by the Canadian public for involvement in the government's decision making process.

ENERGY PRICES

The most significant development in energy markets in 2000 was the large increase in natural gas prices that occurred particularly in the latter part of the year when prices rose to unprecedented levels. Oil prices remained near their highest levels since the Iraq/Kuwait conflict in 1990, although there was some easing toward the end of the year. Evolving market conditions in the electricity industry have also resulted in regional concerns about electricity prices, especially in Alberta.

Higher energy prices have caused Canadians to become more interested in, and concerned about, energy matters. Throughout the 1990s, energy prices were generally low and many Canadians invested in businesses and business processes that use relatively large amounts of energy. In addition, Canada's cold climate and long distances between population centres make high energy use a fact of life for many Canadians. The large increase in energy prices is putting an increased financial burden on many consumers and is threatening the viability of some energy-intensive businesses.

While Canadian energy users are facing higher costs, energy exports are making a large contribution to Canada's trade balance. The value of natural gas, crude oil, natural gas liquids (NGL) and electricity exports more than doubled in 2000, reaching over \$50 billion. After several years of below normal returns, many oil and gas production companies earned record profits.

High natural gas and oil prices are sending a strong signal to the producing sector of the industry to develop new supplies. The industry responded by drilling a record number of gas wells in 2000, and it is anticipated that there will again be a significant increase in exploration efforts in 2001. The cash flow that is being generated by the high prices is providing a source of funds for producing sector companies to increase their exploration efforts.

NATURAL GAS USE IN THE MARITIMES

In 2000, Maritimes and Northeast Pipeline Management Ltd. (M&NP) constructed laterals to the cities of Halifax, Saint John and Moncton, bringing natural gas from the offshore Sable Island project to these cities. The provincial regulatory authorities in Nova Scotia and New Brunswick awarded distribution franchises, heralding the dawn of the natural gas business in these provinces. Although prices were unexpectedly high last year, natural gas will provide an important alternative to imported oil for industrial use and home heating.

FRONTIER RESOURCE DEVELOPMENT

Many industry analysts believe that it will be necessary to develop frontier resources in the future to meet the growing market demand for natural gas in North America. PanCanadian Limited announced a major natural gas discovery in the Panuke field offshore Nova Scotia, and the Board received several applications to drill natural gas wells north of the 60th parallel.

The exploration industry acquired new drilling rights in the Mackenzie Valley and Mackenzie Delta areas, and seismic exploration programs increased significantly in these areas. Producer groups have announced that they are conducting feasibility studies on a major natural gas pipeline from the Mackenzie Delta, while owners of natural gas on the North Slope of Alaska have announced that they are studying the feasibility of bringing gas to southern markets via pipeline.

Increased exploration and production activity is also occurring in the southern Territories, building on the previous exploration activities in the Fort Liard area. The highlight of activity in this area last year was Chevron Canada Resources' discovery in the Fort Liard region of one of the largest gas producing wells in western Canada. Three new gas fields located in this area were developed and placed in production. Projects in this region are within economic reach of the existing pipeline network.

ENVIRONMENT AND SAFETY

While most Canadians recognize the need to develop new energy supplies, there is a growing expectation that this development will not proceed at the expense of the environment, health and safety.



Canadians in the North are concerned about the potential environmental and socio-economic impacts of large scale exploration and development, and of construction of a major pipeline. At the same time, landowners in southern areas are increasingly demanding that they be dealt with fairly by pipeline companies whose facilities cross their lands. The NEB is being challenged to provide clear and efficient regulatory procedures that do not unnecessarily delay the development of new energy projects, while ensuring that the rights of landowners are properly protected and that the integrity of ecosystems is preserved.

The pipeline industry in Canada has an excellent safety record. In 2000, there was only one major pipeline rupture and it did not result in any injuries. The risks imposed by pipelines to public safety are relatively low, particularly when compared with other modes of transportation. Nonetheless, Canadians expect to be protected from risks such as gas line explosions or oil line failures.



PUBLIC CONCERNS

In addition to their concerns about the environment, health and safety, Canadians increasingly expect to play a role in decisions that affect them. Canadians have better access to information through new technologies and have become more concerned about the effects of increased energy development. The NEB's efforts to engage the public form part of a federal government-wide initiative promoting increased citizen engagement.

PIPELINE INDUSTRY RESTRUCTURING

The year 2000 marked a fundamental change in the structure of the Canadian natural gas pipeline industry. On 1 December 2000, the Alliance Pipeline Ltd. (Alliance) system commenced operations. The Alliance system transports natural gas and NGL from northeastern British Columbia and Alberta to the Chicago market area. At the same time, the Vector Pipeline Ltd. (Vector) system also commenced operations. This pipeline connects to Alliance and other Chicago-area pipelines and delivers natural gas to southern Ontario. The combination of Alliance and Vector is providing natural gas producers and buyers with an alternative to the TransCanada PipeLines Limited system, which previously was the only means of moving gas from western Canada to eastern markets.

Increased competition is also occurring in British Columbia where BC Gas Ltd. constructed the provincially-regulated Southern Crossing project, a pipeline which can transport Alberta natural gas across southern British Columbia to the lower mainland area. The pipeline provides consumers in that area with an alternative source of gas.



The development of competition in the natural gas pipeline industry, as well as temporary over-capacity resulting from pipeline capacity increases, have changed the environment in which pipeline companies have traditionally operated. As a result, the traditional cost of service model may need to be reassessed and industry and the Board may need to develop new approaches to the economic regulation of pipelines.

REGULATORY HIGHLIGHTS

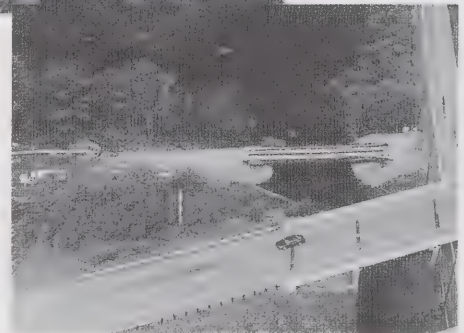
In 2000, the Board was not faced with any major applications for new pipeline facilities and held few lengthy public hearings. However, the Board faced a heavy workload with respect to the monitoring of the construction of new pipeline facilities, most notably the completion of the Alliance system and the M&NP laterals to Halifax and Saint John. In addition, the Board received more applications for approvals of exploration and development activity north of the 60th parallel than it had in any other year in the past decade.

Two major pipeline project applications that had been anticipated for 2000 were the Millennium Pipeline project and the Georgia Strait Crossing project. While the Board signed agreements with relevant agencies regarding the assessment process for both of these projects, and held public meetings to explain the regulatory process to interested citizens, public hearings were not held for either project during 2000.

In 2000, the Board processed more than 597 applications from regulated companies under the *National Energy Board Act* (NEB Act), and 142 applications under the *Canadian Oil and Gas Operations Act* (COGO Act) for exploration and production activity in frontier areas.

Applications under the NEB Act included:

- 99 requests for approval to construct and operate gas, oil and electrical facilities under Part III of the NEB Act;
- 331 requests for licences and orders to export gas, crude oil and electricity under Part VI of the NEB Act; and
- 3 requests from “Group One” companies for approval of pipeline tolls and tariffs under Part IV of the NEB Act.



The majority of the orders issued by the Board were for routine improvements to the operation of existing regulated facilities or for short term export orders. Major decisions were released by the Board in 2000 on facility applications for the Shiha Pipeline, the North Suffield Pipeline and the Ladyfern Pipeline projects.

In January 2000, the Board approved an application by Shiha Energy Transmission Ltd. for the construction and operation of the 24 km, 324 mm (12 inch) Shiha Pipeline in the Fort Liard area of the Northwest Territories and northeastern British Columbia. This project was the first pipeline in 15 years approved by the Board to cross a provincial/territorial border and signalled the start of renewed development in the southern Territories.



The Board approved an application by AEC Suffield Gas Pipeline Inc. for the construction and operation of the 97 km, 406 mm (16 inch) natural gas North Suffield Pipeline, crossing from southeastern Alberta to southwestern Saskatchewan. In December, the Board approved an application by Ricks Nova Scotia Company to construct and operate the 12 km Ladyfern Pipeline northeast of Fort St. John, British Columbia.

The Board also held public hearings for tolling/tariff applications on the TransCanada PipeLines Ltd. (TransCanada) system and the M&NP mainline system. In addition, the Board heard a request by Trans-Northern Pipelines Inc. (Trans-Northern) to suspend service on its Don Valley Lateral.

In the TransCanada hearing, the Board found that the current bidding mechanism for Interruptible Transportation and Short Term Firm Transportation services was still appropriate and denied TransCanada's request for discretion to set the floor prices for these two services.

In the M&NP hearing, the Board approved final tolls for the period 1 December 1999 to 30 September 2000. In addition to decisions on revenue requirement, rate base and rate of return, the Board decided that firm service deliveries to both primary and secondary delivery points in Nova Scotia and New Brunswick should receive the discount agreed to by M&NP, the two provinces and Sable Offshore Energy Incorporated in the Joint Position on Tolling and Laterals agreement signed in 1997.

In the Trans-Northern proceeding, the Board found that the cost of operating the 19 km Don Valley Lateral far exceeded the tolls generated by providing this service. The pipeline had been subject to declining volumes for the past 15 years. The Board approved the suspension of service on this pipeline.

In December 2000, the NEB and the Mackenzie Valley Environmental Impact Review Board signed a memorandum of understanding that establishes a cooperative framework for environmental impact assessment for projects within the jurisdiction of both boards.

The NEB also participated in the Northwest Territory Regulatory Road Map project, which developed a guide to the regulatory processes for oil and gas activities related to exploration, development and production. This guide is the first of a series of guides covering different land claim areas. The development of this guide was jointly sponsored by the Canadian Association of Petroleum Producers and the Department of Indian Affairs and Northern Development. A link to this guide can be found on the NEB's Web site at www.neb.gc.ca.

Energy Overview



As part of its monitoring function, the Board informs the public about energy market trends on an ongoing basis. It has statutory reporting requirements with respect to energy exports and imports. In addition, the Board prepares reports on current and future energy market developments in Canada. These reports are called *Energy Market Assessments* (EMAs). A summary of the EMAs published in 2000 is provided in the Economic Efficiency section of this report.

Providing and interpreting energy market information helps the Board achieve its goal that Canadians derive the benefits of economic efficiency. This overview provides a summary of Canadian energy supply, consumption, production, prices and trade over the last five years, with an emphasis on 2000 data and developments.¹ Statistical appendices have been prepared as a companion document to the Annual Report, with details on crude oil, natural gas and electricity supply and disposition, industry activity, facility certificates, orders and licences for exports, and pipeline financial information (see List of Appendices in Supplement VI).

ENERGY AND THE CANADIAN ECONOMY

In 2000, the energy industry accounted for just over six percent of Canada's Gross Domestic Product and employed approximately 290 000 people. Energy export revenues accounted for 12 percent of all Canadian exports, up from eight percent the previous year. This increase was mainly due to higher commodity prices for crude oil and natural gas, as well as higher prices for electricity exports.

Canadian energy production expanded by four percent during the 1996-2000 period. Petroleum (including crude oil and equivalent and NGL) and natural gas both increased by about nine percent and accounted for 73 percent of production in 2000. In recent years, higher levels of natural gas and petroleum production have been stimulated by sustained growth in the North American economy.

Overall, hydroelectric generation also increased during the 1996-2000 period, while coal and nuclear generation declined, although nuclear generation did increase somewhat in 1999 and 2000 (Table 1). Renewables and other fuels, which

TABLE 1
Domestic Energy Production by Energy Source
(Petajoules)

	1996	1997	1998	1999	2000 ^(a)
Petroleum	5 180	5 446	5 634	5 380	5 623
Natural Gas	5 852	5 953	6 135	6 227	6 383
Hydroelectricity	1 268	1 250	1 183	1 235	1 291
Nuclear	1 012	900	780	815	815
Coal	1 832	1 897	1 801	1 729	1 656
Renewable and Other	552	554	569	600	615
Total	15 696	16 000	16 102	15 986	16 382

(a) Estimates.

¹ Where available, information has been provided using 2000 data. In some cases, for example reserves, 1999 data is provided.

consist mostly of wood, wood waste and steam, grew by about 11 percent and accounted for just under four percent of energy production in 2000.

Preliminary estimates indicate that domestic energy demand increased by about 2.5 percent in 2000, after a similar increase in 1999. This is well above the average annual growth of the past four to five years of approximately one percent. While it is likely that demand has been somewhat influenced by the substantial increases in oil and gas commodity prices since early 1999, the extent of the impact is uncertain, given that demand has still increased across the main consuming sectors (Table 2). The experience from previous episodes of large energy price increases suggests that consumers need to perceive price changes as permanent before they will significantly reduce consumption. Some conservation measures, such as turning down thermostats and driving less, can have an immediate impact; however, major improvements in energy efficiency may take several years.

While the timing and regional impacts vary, it is clear that individual Canadian consumers and businesses are facing an increased financial burden resulting from higher prices for essential transportation and heating fuels. Information from Statistics Canada, for example, indicates that consumers paid about 36 percent more for natural gas at the end of 2000, compared with year-end 1999.

According to information from the International Energy Agency, per capita energy consumption in Canada remains high relative to most other developed countries. However, despite its cold climate, energy intensive resource-based economy, and long distances between population centres, Canada's per capita consumption is about the same as the U.S.

In 2000, total gross export earnings for natural gas, petroleum, electricity and coal were about \$50 billion. Canada's energy trade surplus (exports minus imports) increased to \$34 billion, compared with \$20 billion in 1999 (Figure 1). Natural gas accounted for 55 percent of the energy trade surplus (\$16 billion),

TABLE 2
Domestic Energy Consumption
(Petajoules)

	1996	1997	1998	1999	2000 ^(a)
Space Heating	1 985	1 973	1 869	1 951	2 033
Transportation	2 125	2 183	2 244	2 287	2 310
Other Uses ^(b)	3 479	3 493	3 428	3 515	3 637
Non-Energy ^(c)	800	833	777	790	804
Electricity					
Generation ^(d)	2 189	2 142	2 129	2 145	2 174
Total	10 578	10 624	10 447	10 687	10 957

(a) Estimates.

(b) Includes energy used for space cooling and ventilation as well as a variety of uses in the industrial sector.

(c) Includes energy used for petrochemical feedstocks, asphalt, lubricants, etc.

(d) Includes producer consumption and losses as well as nuclear energy conversion requirements.

FIGURE 1
Net Energy Export Revenues
(million hectares leased)

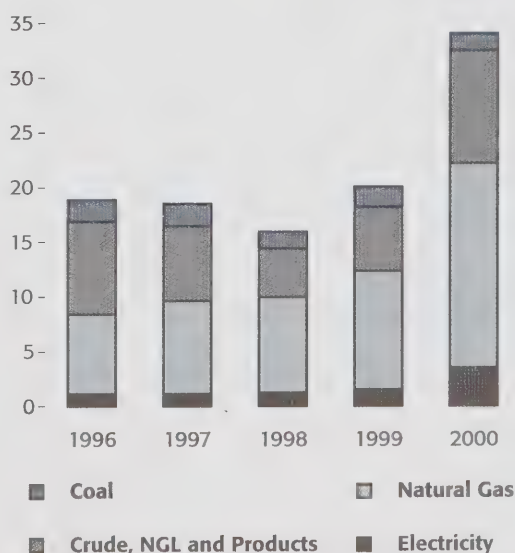


FIGURE 2
WTI and Brent Oil Prices
(US\$/bbl)



TABLE 3
Canadian Production of Crude Oil and Natural Gas Liquids
(thousand cubic metres per day)

	1996	1997	1998	1999	2000 ^(a)
Conventional Light (East)	3.7	2.7	13.5	17.5	23.0
Conventional Light (West)	136.3	132.4	126.9	113.1	108.8
Synthetic	44.1	45.5	48.2	51.5	50.1
Pentanes Plus	26.4	27.3	27.5	27.2	27.2
Total Light	210.5	207.9	216.1	209.3	209.1
Conventional Heavy	82.2	89.6	86.5	83.0	90.7
Bitumen	26.1	37.6	45.7	42.1	45.1
Total Heavy	108.3	127.2	132.2	125.1	135.8
Total Crude Oil and Equivalent	318.8	335.1	348.3	334.4	344.9
Natural Gas Liquids	91.2	93.5	96.3	101.2	110.3

(a) Estimates.

while crude oil, NGL and petroleum products accounted for 30 percent (\$11 billion) and electricity for 10 percent.

CRUDE OIL AND NATURAL GAS LIQUIDS

International Markets

After a pronounced increase in 1999, oil prices pushed to higher levels in 2000. The price of benchmark West Texas Intermediate (WTI) crude oil reached a high of nearly US\$38 per barrel in the autumn, before declining to about US\$27 per barrel at year-end. WTI averaged US\$30.25 for the year compared with US\$19.25 in 1999.

In response to a growing worldwide demand for oil, coupled with a tight supply of products, OPEC raised production four times in 2000. When the group initially increased output in March, it introduced a price band mechanism designed to support prices in the range of US\$22 to \$28 per barrel, as represented by an OPEC "basket" of seven crude oils. Under this mechanism, as modified in June 2000, if the OPEC basket remained above US\$28 per barrel for 20 consecutive days, output would be raised by 500 000 barrels per day. If the basket fell below US\$22 per barrel for 10 days, then production would be reduced by the same amount.

Using this mechanism, OPEC increased production in June, September and October. Overall, OPEC raised output by 3.7 million barrels per day in 2000, or 16 percent. By year-end, there was growing evidence that the group would likely have to cut production to maintain prices in the desired range.

Production and Reserves Replacement

Canadian production of crude oil and equivalent, projected to year-end 2000, averaged approximately 345 000 cubic metres (2.2 million barrels) per day in 2000, up more than three percent from the 1999 level. This growth reflects increases in bitumen and conventional heavy crude oil production from

western Canada and an increase in conventional light production from eastern Canada (Table 3).

Production at Hibernia, offshore Newfoundland, added approximately 23 000 cubic metres (144 800 barrels) per day of conventional light crude oil to Canadian supply in 2000, an increase of over 45 percent from 1999.

In western Canada, crude oil and equivalent supply increased by about one percent in 2000. Mainly due to the natural decline of the reservoirs, conventional light crude oil production declined by almost four percent. Conventional heavy crude oil and bitumen production increased by nine and seven percent, respectively, primarily as the result of higher oil prices in the second half of 1999 through 2000.

The Board's estimate of remaining conventional crude oil and crude bitumen reserves at year-end 1999 (the last year for which data is available) is 27 850 million cubic metres (175 billion barrels) (Table 4). This is four times larger than the 1998 estimate. This substantial increase is based on revised estimates of bitumen reserves in Alberta that can be recovered by underground or in-situ methods. Previously, the Alberta Energy and Utilities Board only recognized those in-situ reserves that were in areas under active development, while it now recognizes all areas which could be accessed by in-situ recovery methods.

Conventional oil reserves in Canada increased by eight percent to 702 million cubic metres (4.4 billion barrels) in 1999, with the addition of the Terra Nova reserves offshore Newfoundland. All other regions of Canada had reserves reductions except British Columbia, which showed a small increase. These reductions, especially in western Canada, are a result of the decreased oil-related activity levels in 1999. If the Terra Nova reserves are excluded, the Canadian conventional reserves would have declined by seven percent.

While remaining established reserves are reduced by production each year, new discoveries, extensions to existing pools and revisions to reserves estimates in existing pools add to reserves. From 1995 to 1999 on a cumulative basis, additions to established reserves of conventional light and heavy crude oil have replaced 107 percent of

TABLE 4
Estimates of Established Reserves of Crude Oil and Bitumen at 31 December 1999

Conventional Crude Oil	Initial	Remaining
British Columbia ^(a)	118.8	26.4
Alberta ^(b)	2 521.6	301.7
Saskatchewan ^(c)	712.6	164.2
Manitoba ^(d)	37.4	3.8
Ontario ^(e)	14.0	1.9
NWT and Yukon:		
Arctic Island and Eastern		
Arctic Offshore ^(f)	0.5	0.0
Mainland Territories -		
Norman Wells	37.5	8.2
Nova Scotia ^(d) - Cohasset and Panuke	7.0	0.0
Newfoundland ^(d) - Hibernia and		
Terra Nova	205.1	195.3
Total	3 654.5	701.5
Crude Bitumen		
Oil Sands - Upgraded Crude ^(b)	5 590.0	5 240.0
Oil Sands - Bitumen ^(b)	22 740.0	22 610.0
Total	28 330.0	27 850.0
Total Conventional and Bitumen	31 984.5	28 551.5

(a) British Columbia Ministry of Energy & Mines and NEB common database

(b) Alberta Energy & Utilities Board and NEB common database

(c) Provincial estimate for 31 December 1998, NEB updated to 31 December 1999

(d) Provincial Agencies and Offshore Boards

(e) Canadian Association of Petroleum Producers

(f) Ben Horn abandoned 1996

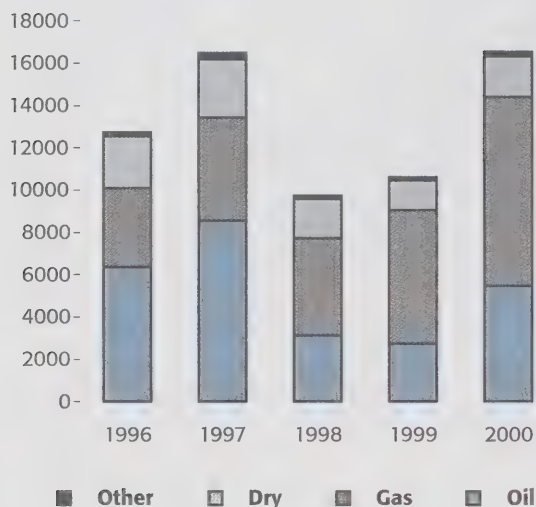
(g) Reflects provincial changes

Note: Totals may not add due to rounding

production. However, if the Terra Nova reserves are excluded, cumulative additions have replaced only 83 percent of cumulative production. In three of the past five years, including 1999, additions have more than replaced conventional crude oil production.

Industry Activity

FIGURE 3
Number of Wells Drilled



A record 16 507 wells were drilled in 2000, exceeding the previous record established in 1997 (Figure 3) and surpassing drilling activity in 1999 by 55 percent. The return of higher oil prices provided a strong incentive for oil well drilling and the number of oil well completions in 2000 doubled from 1999. High gas prices and high demand also led to an increase in gas well drilling. Gas well completions continue to account for over 60 percent of successful completions.

Impacts associated with increased drilling activity may include increased concern about the environment and access to sensitive lands, while the potential for increased industry/landowner conflicts may also occur.

High oil and gas prices led to increased competition for land, as western Canada's lease and licence sales totalled 4.8 million hectares at an average price of \$299 per hectare, 51 percent more than in 1999.

The revenue from land sales collected by the four western Canada provinces increased by more than 76 percent to \$1.4 billion. The possibility of constructing northern pipelines to southern markets has renewed interest in land in the Beaufort Sea and Mackenzie Delta areas. The work commitments made by successful bidders for exploration rights, to be undertaken in future years, had a value of \$500 million in 2000. This was more than double the commitments made in 1999.

The total number of seismic crews operating in western Canada increased by 13 percent in 2000. In 1999 and 2000, seismic activity was concentrated in the foothills front, and the southeast, central and northeast areas of Alberta. More than 65 percent of the active seismic crews operated in these areas.

Crude Oil Exports and Imports

Total crude oil exports, including pentanes plus and synthetic, are estimated at 221 700 cubic metres (1.4 million barrels) per day, up 11 percent from 1999. The 2000 total comprised approximately 94 800 cubic metres (597 900 barrels) per day of light crude oil and equivalent and approximately 126 900 cubic metres (799 500 barrels) per day of blended heavy crude oil.

The estimated value of crude oil exports in 2000 was \$19.5 billion compared with \$11.5 billion in 1999. While export volumes increased, higher crude oil prices were the main contributing factor for higher oil revenues and export values. In 2000, the estimated average light and heavy crude oil export prices were \$275 and \$215 per cubic metre (\$43.65 and \$34.15 per barrel) respectively, compared with \$174 and \$144 per cubic metre (\$27.60 and \$22.85 per barrel) in 1999. The widening of the light/heavy price differential toward year-end reflected, among other factors, a surplus of heavy crude oils available from the Middle East that eventually caused North American prices to decline (Figure 4).

The U.S. Midwest continued to be Canada's largest export market for crude oil, followed by Montana and Washington (Figure 5).

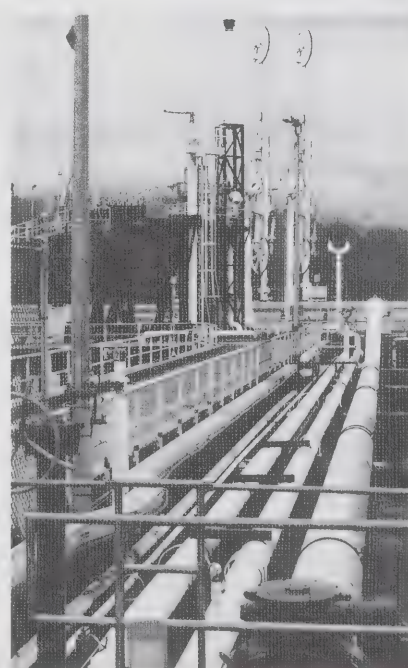
In 2000, crude oil imports were 146 100 cubic metres (920 400 barrels) per day and represented over 53 percent of total refinery feedstock requirements in Canada, compared with 50 percent in 1999. The Atlantic region and Quebec imported most of their crude oil requirements. Ontario refiners received about 31 percent of their feedstock requirements from foreign sources compared with 26 percent in 1999. The increase reflects Enbridge Pipelines Inc.'s Line 9 reversal from Montreal to Sarnia, which was completed in late 1999. In the second quarter of 2000, Line 9 reached and maintained its full capacity of 38 000 cubic metres (240 000 barrels) per day for the remainder of the year. Other regions did not import crude oil during 2000.

Crude oil originating from OPEC countries represented 33 percent of total imports, down from 40 percent in 1999. North Sea crude comprised 59 percent of total imports, an increase of 27 percent. This increase is a direct result of the Line 9 reversal, as offshore crude can now be shipped to refineries in Montreal and Sarnia. Imports from other sources accounted for seven percent, down from 17 percent in 1999.

Oil Refining

The demand for petroleum products in Canada averaged 251 300 cubic metres (1.6 million barrels) per day, a slight increase over 1999. Refinery production also rose marginally to 305 900 cubic metres (1.9 million barrels) per day.

FIGURE 4
Light and Heavy Crude Oil Export Prices
(\$/Cubic Metre)



Refinery receipts of domestic crude oil averaged 128 500 cubic metres (0.8 million barrels) per day, a decrease of five percent from 1999.

Main Petroleum Product Exports and Imports

In 2000, exports of main petroleum products (such as heavy fuel oil, gasoline and aviation fuel) and partially processed oil fell slightly to 39 200 cubic metres (247 000 barrels) per day. This reflects a decrease in shipments of middle distillates such as gasoline, naphtha and kerosene.

The estimated revenue from main petroleum product exports was \$3.2 billion in 2000, up significantly from \$2.0 billion in 1999. The increase in revenues was the result of higher prices.

FIGURE 5
Crude Oil and Equivalent Supply and Disposition
(thousand cubic metres per day)

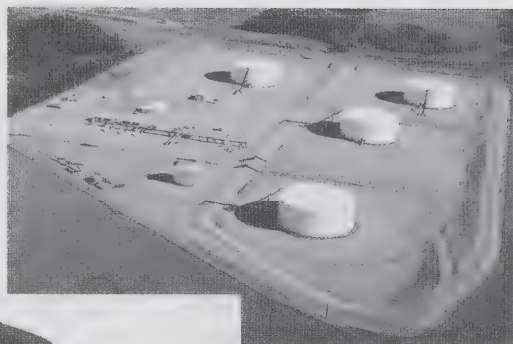


Imports of main petroleum products in 2000 averaged 14 800 cubic metres (93 240 barrels) per day, a slight decrease from 1999. Imports of middle distillates and jet fuel increased, while imports of gasoline and heavy fuel oil fell. Heavy fuel oil did, however, make up 43 percent of the total imports of main petroleum products.

The U.S. was Canada's largest market, accounting for almost 95 percent of product exports; the East Coast continued to be the largest market segment, followed by the Midwest. Exports were also made to Latin America and Europe.

Oil Pipeline Capacity

In 2000, Enbridge Pipelines Inc. operated at approximately 77 percent of total capacity, with the actual throughput averaging 214 000 cubic metres (1.3 million barrels) per day. Line 9 operated at or near capacity from June 2000 onward. The average utilization of Line 9 was approximately 84 percent. The Trans Mountain Pipe Line Company Ltd. system operated below capacity during 2000.



Natural Gas Liquids (excluding pentanes plus)

Production of NGL from gas plants and refineries in 2000 was estimated at 110 300 cubic metres (695 thousand barrels) per day. Ethane production was 48 100 cubic metres (303 thousand barrels) per day, propane production was 34 900 cubic metres (220 thousand barrels) per day and the production of butanes was 27 300 cubic metres (172 thousand barrels) per day. In 2000, production of ethane, propane and butanes increased by 17 percent, three percent and four percent, respectively. The large increase in ethane production results from the Solex plant resuming production and the Joffre III plant start-up late in the year.

NGL exports during 2000 were estimated at 33 700 cubic metres (212 thousand barrels) per day, a less than one percent decrease from 1999. Ethane exports were 2 200 cubic metres (14 thousand barrels) per day, propane exports were 24 900 cubic metres (157 thousand barrels) per day and butane exports were 6 600 cubic metres (42 thousand barrels) per day. Ethane exports increased from 1999 levels by seven percent, while propane and butane exports decreased by less than one percent and six percent, respectively.

The U.S. Midwest continued to be Canada's largest market for propane and butanes, accounting for 64 percent of the total export

volume. Smaller amounts were delivered to the U.S. East Coast and West Coast.

The estimated value of NGL exports in 2000 was \$2.5 billion, compared with \$1.5 billion in 1999. Although export volumes decreased in 2000, higher prices contributed to a 69 percent increase in revenues.

NATURAL GAS

Record natural gas prices were experienced in 2000 as growth in demand outpaced growth in supply. Prices increased steadily through the year and by year-end had quadrupled over 1999 year-end prices. Canadian producers responded by substantially increasing investments in land purchases and gas well drilling within the conventional areas of the Western Canada Sedimentary Basin. Developments in the Northwest Territories and on the East Coast also resulted in two new sources of supply. Three highly productive wells in the Fort Liard area in the Northwest Territories were placed in production in the latter part of 2000 and gas was discovered in deeper horizons in the Panuke area off Nova Scotia. Further, production from Sable Island was increased to design capacity during 2000.

Canadian Natural Gas Markets

Canadian natural gas sales are estimated to have increased by 4.5 percent in 2000, following a 3.6 percent increase in 1999. Growth was broadly based across the residential, commercial and industrial sectors. Consumption in electricity generation also increased.

The sudden rise in natural gas commodity prices (Figure 6) placed a financial burden on many Canadian consumers. In response, the federal government and some provinces introduced programs to partially offset the impact of higher prices.

Efforts toward making more supply options available and increasing the reliability of supply have resulted in the construction of a number of new pipelines. The year 2000 marked the first time that the Maritime provinces have had access to natural gas. The Sable Island project, which started producing in late 1999, has primarily served the U.S. Northeast markets. However, a number of laterals were constructed last year that will allow for further development of natural gas markets in New Brunswick and Nova Scotia.

FIGURE 6
Alberta Natural Gas Prices - AECO/NIT
(\$/Gigajoule)



Production and Reserves Replacement

Canadian natural gas production in 2000 totalled 174.5 billion cubic metres (6.2 trillion cubic feet [Tcf]), about two percent above 1999 levels, primarily due to the first full year of production from Sable Island. Alberta accounted for 81 percent of total Canadian production, British Columbia 12 percent, Saskatchewan four percent, Nova Scotia two percent and Ontario and the Northwest Territories the remainder.

Gas well completions in 2000 increased by 41 percent over 1999. Drilling activity increased in most areas of the Western Canada Sedimentary Basin, with the largest increase occurring in southeastern Alberta and southwestern Saskatchewan, where wells tend to be shallow and can be placed in production quickly. Shallow wells account for about 70 percent of overall gas well completions in western Canada.

The Board's estimate of remaining established reserves of marketable natural gas as of year-end 1999 is 1 629 billion cubic metres (58 Tcf). This includes the east coast offshore, which began production at year-end 1999, and the new discoveries in the Liard region of the Northwest Territories (Table 5). The volume of remaining established reserves declined by one percent from 1998 as production continued to outpace reserve additions.

From 1995 to 1999, cumulative additions of marketable gas reserves, including the Nova Scotia and Liard reserves, replaced 77 percent of total production over the same period. Without the Nova Scotia and Liard reserves, replacement would be 65 percent. Additions in 1999 were the second highest in recent years. This resulted from a substantial increase in drilling activity. New discoveries and fewer downward revisions to reserves estimates for existing gas pools, compared with previous years, resulted in replacing 152 billion cubic metres (5.4 Tcf) of gas, or 89 percent of production in 1999.

Natural Gas Exports and Imports

In 2000, Canadian gas exports reached a record of 100 billion cubic metres (3.5 Tcf), an increase of four percent from 1999 and nearly 23 percent over 1995. Exports in 2000 accounted for about 57 percent of total Canadian production (Figure 7).

TABLE 5
Estimates of Established Reserves of Natural Gas at 31 December 1999
(billion cubic metres)

	Initial	Remaining
British Columbia ^(a)	604.8	236.7
Alberta ^(b)	3 919.3	1 207.2
Saskatchewan ^(c)	192.4	70.3
Ontario ^(d)	44.1	12.0
NWT and Yukon	28.2	17.7
Nova Scotia - Offshore	85.0	85.0
Total	4 873.8	1 628.9

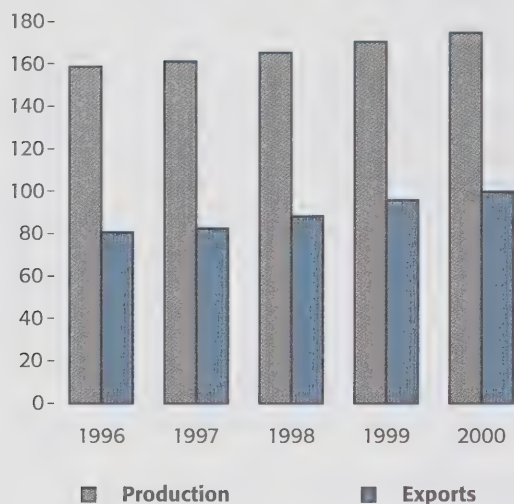
(a) British Columbia Ministry of Energy & Mines and NEB common database

(b) Alberta Energy & Utilities Board and NEB common database

(c) Provincial estimate for 31 December 1998, NEB updated to 31 December 1999

(d) Canadian Association of Petroleum Producers

FIGURE 7
Canadian Natural Gas Production and Exports
 (billion cubic metres)



Export sales in 2000 were distributed as follows: 37 percent to the Midwest, 28 percent to the Northeast, 19 percent to California, 14 percent to the Pacific Northwest and one percent to the Mountain region. The export volumes to all markets, except for the Northeast, were similar to 1999. The Northeast market accounts for most of the increase in exports, reflecting the volumes of gas transported by M&NP from Sable Island.

The proportion of Canadian natural gas exported under short-term orders (terms of less than two years) increased over the last decade, but stabilized at about 73 percent in 1999 and 2000. Imports of natural gas into Canada are relatively minor, reaching approximately 2.2 billion cubic metres (0.08 Tcf) in 2000.

The substantial increase in natural gas prices in North America is reflected in the price received for exports. The average price of Canadian natural gas exports at the international border in 2000 rose by about 68 percent, to \$5.20 per gigajoule (GJ) from \$3.10 per GJ in 1999.

Higher export volumes and higher prices for Canadian gas translated into increased revenue from natural gas exports. In 2000, revenue from Canadian natural gas exports rose by 73 percent to \$19.0 billion.

Natural Gas Pipeline Construction

In December 1999, M&NP entered service with 12.6 million cubic metres (445 million cubic feet) per day of pipeline capacity. This pipeline was primarily used to export gas to the U.S. northeast throughout 2000, but additional capacity to serve domestic markets is expected to go into service during 2001. The capacity of the New Brunswick and Nova Scotia laterals is about two-thirds the capacity of the M&NP mainline; however, some time will be required to develop markets so initially these laterals are not expected to operate at capacity.



Construction of the provincially-regulated Southern Crossing pipeline by BC Gas Ltd. was completed in 2000. It connects to the Alberta Natural Gas pipeline at Yahk, British Columbia. The Southern Crossing pipeline has a capacity of 7 million cubic metres (250 million cubic feet) per day. It provides British Columbia consumers with access to Alberta supplies and has a capacity equal to approximately 35 percent of provincial natural gas consumption.

FIGURE 8
Natural Gas Supply and Disposition
 (billion cubic metres)



The Alliance Pipeline, which has the capacity to transport 37 million cubic metres (1 300 million cubic feet) per day from northwest Alberta and northeast British Columbia to the Chicago market, went into service in December 2000. With the start-up of the Vector pipeline in 2000, gas can now be transported from the Chicago area to southern Ontario, thereby offering an alternate transportation route for western Canadian gas to southern Ontario. The Vector pipeline has a capacity of about 20 million cubic metres (700 million cubic feet) and represents about 28 percent of natural gas consumption in Ontario.

ELECTRICITY

The Board's mandate with respect to electricity is concerned principally with the construction and operation of international power lines and the export of electricity. Challenges are presented by the significant ongoing changes in the structure of the North American electricity industry. The Board must be aware of these changes and their potential impacts, while continuing to carry out its legislated regulatory obligations.

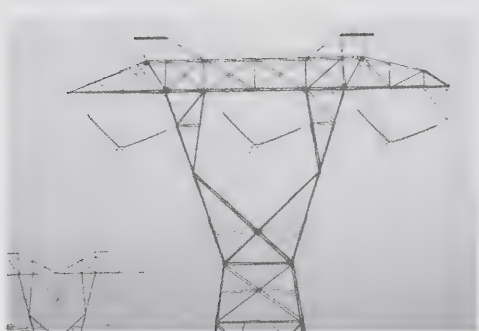
Market and Restructuring Developments

Over the past decade, major initiatives have been undertaken to restructure electricity markets in North America. In the traditional market structure, a single utility generated, transmitted and distributed electricity within a defined franchise area (for example, within a province or state). Utilities that generated electricity in one franchise area had limited access to markets in another franchise area.

The intent of restructuring is to separate the generation, transmission and distribution functions of a utility, and to introduce competition into the generation sector. Open access to transmission grids must be provided to enable buyers to purchase electricity from the most competitive generation sources.

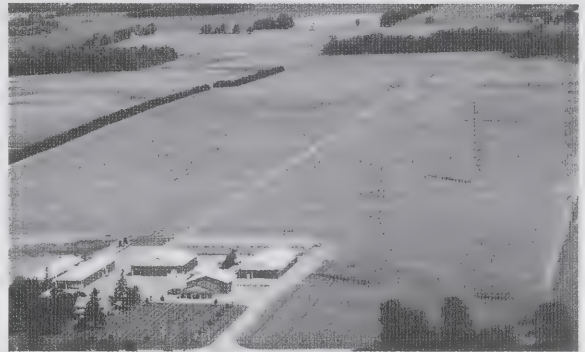
In Canada, Alberta has progressed the furthest of any province in restructuring its electricity industry. Following the restructuring legislation of the Electric Utility Act, 1995, as amended in 1998, the Alberta government increased competition in electricity generation by conducting two power auctions, one in August and one in December. Independent marketers bought the rights to sell the power from generating plants constructed before 1996, while the plant owners continued to operate their plants at cost, including a return on investment (electricity from generating units constructed after 1995 was already sold on a competitive basis). Later in the year, the incumbent distribution utilities and competitors prepared for the introduction of retail choice on 1 January 2001. Beginning with the new year, residential and business consumers would be able to choose the terms and conditions of service from a number of alternative suppliers or choose a "regulated rate option".

Alberta wholesale prices have been determined by market forces through the Alberta Power Pool since January 1996. In 2000, the average pool price increased dramatically, averaging \$133 per megawatt-hour (MW.h), compared with \$43/MW.h in 1999. Spot prices often achieved the Power Pool cap of \$1000/MW.h. Analysts and market players identified a number of causes for the price run-up, including: a shortage in the construction of new generation



relative to increasing demand; prices being determined by high-cost natural gas generation; price pressures resulting from rising import costs; and problems associated with the procedures for setting prices in the power pool.

After Alberta, Ontario has taken the most steps to restructure its industry. In 1999, Ontario Hydro was reorganized into separate generation, transmission and distribution units. In 2000, the newly-formed distribution companies filed tariff applications with the Ontario Energy Board. However, Ontario's plans to introduce complete wholesale and retail restructuring were postponed from 1 November 2000 to some time after the spring of 2001. In the interim, generation by Ontario Power Generation continues under traditional cost of service regulation.



In 2000, other provinces took steps to prepare for the opening of their transmission systems. These steps were taken with a view to providing greater transmission access in Canada, gaining increased access to U.S. markets by meeting the U.S. Federal Energy Regulatory Commission (FERC) Order 888 reciprocity requirements and for potential participation in regional transmission organizations (RTOs). The formation of RTOs is an important aspect of FERC's initiative to facilitate greater access to transmission and increase competition. FERC Order 2000 requires that RTOs be operational by December 2001. Although participation in an RTO is not mandatory for either U.S. or Canadian companies, in light of the international nature of the transmission grid, the order encouraged Canadian participation.

In 2000, the most significant event in U.S. power markets was the shortage of electricity in California. This had far-reaching pricing impacts for the western U.S. and western Canada. California imports electricity from adjacent states and Canada, but its summer and fall demands could not be accommodated without inducing extreme price pressure. The tight supply situation resulted in record-high prices on the California Power Exchange and the emerging prospect that supplies to some customers would have to be curtailed.

As a result of these events in California, British Columbia realized much higher export prices in 2000 and, because British Columbia engages in trade with Alberta, Alberta import prices were also higher.

TABLE 6
Electricity Production^(a)
(terawatt hours)

	1996	1997	1998	1999	2000 ^(b)
Hydroelectric	349.2	345.3	327.0	341.3	356.8
Nuclear	87.5	77.9	67.5	69.3	69.3
Thermal	111.1	126.9	148.4	146.9	149.4
Total	547.8	550.1	542.9	557.5	575.5

(a) Source: Statistics Canada

(b) Estimates.

Electricity Production

Electricity production rose by just over three percent in 2000. The increase in electricity generation came mainly from hydro sources (Table 6). The increase in production was the outcome of steady growth in domestic demand and substantially increased exports. Exports accounted for an estimated nine percent of generation, up from eight percent in 1999.

Exports and Imports

Electricity exports were 50 terawatt hours (TW.h) in 2000, a 16 percent increase over 1999.

Although this was a record high for exports, the performance was surpassed by export revenues which grew by 111 percent, an increase of \$2.1 billion. This increase is the result of a combination of factors: sustained demand growth in the U.S. driven by continued strong economic growth; the much higher gas prices which resulted in higher generation costs in the U.S.; ongoing unfavourable hydraulic conditions in the Pacific Northwest due to successive years of low precipitation; and the supply situation in California. Electricity prices for sales into the Pacific Northwest and California fluctuated at times by more than 1000 percent.

Hydro-Québec, Powerex (a subsidiary of BC Hydro), Manitoba Hydro, Ontario Power Generation (OPG) and New Brunswick Power accounted for approximately 94 percent of total electricity exports. OPG realized a 60 percent increase in export volumes, although still constrained by the lay-up of some nuclear units. Exports from Manitoba were up 20 percent from the previous year, primarily due to recovering hydraulic conditions in the Winnipeg River basin and widening export markets in the U.S. Midwest and Texas.

Exports from Quebec and New Brunswick were largely determined by market conditions in the U.S. Northeast, which included continued demand growth and high generation costs from gas-fired plants. Quebec exports were up 21 percent. While New Brunswick's export volumes were down from 1999, export revenues still increased by 12 percent.

Although the largest volume of exports was from Quebec, British Columbia was the largest exporter in terms of revenue. As a result of the ongoing supply crisis in California, British Columbia's export revenue increased by 333 percent over the previous year and accounted for 49 percent of total Canadian export revenues. Alberta and Saskatchewan also realized significant increases in export revenues.

Electricity imports remained essentially unchanged when compared with the previous year (a two percent decrease). British Columbia and Quebec, the two largest importers, effected imports when price differentials at off-peak periods in the U.S. made it more economical to import electricity for local needs than to use in-province supplies, thus providing for more effective management of hydro resources.

FIGURE 9
International and Interprovincial Transfers of Electricity 2000^(a)
 (gigawatt hours)



a) Data for interprovincial transfers of electricity are from 1 November 1999 to 31 October 2000 and are compiled from Statistics Canada's Electric Power Statistics Monthly.

Data for United States imports and exports are for 2000 (excludes exchanges) and are compiled by the NEB.

Safety and Environment

Goal 1:

NEB-regulated facilities are safe and perceived to be safe.

Goal 2:

NEB-regulated facilities are built and operated in a manner that protects the environment and respects individuals' rights.

A primary aspect of the NEB's purpose is to promote safety and environmental protection. This is reflected in two of the NEB's four corporate goals. While these two goals have separate intents, they are operationally linked and form the cornerstones of the NEB's physical regulation program. Projects undertaken by the NEB often result in both increased safety and protection of the environment.

The NEB's regulatory responsibilities for public safety, as well as for the protection of the environment, are set out in the NEB Act and the COGO Act. The NEB is also required to meet the requirements of the *Canadian Environmental Assessment Act* (CEA Act) and the *Mackenzie Valley Resources Management Act* (MVRM Act) by ensuring that environmental assessments, including follow-up monitoring requirements, are properly conducted for projects under its jurisdiction.

The inherent risks from facilities under the NEB's jurisdiction are effectively managed through competent design, construction, operation and maintenance practices. As designer, constructor and operator of a facility, a pipeline company has the greatest control of these facilities and, as such, has the primary responsibility for its facilities. While the primary responsibility for safety and environmental protection rests with industry, the NEB plays a significant role in promoting these aspects by ensuring that a regulatory framework is in place that encourages companies to maintain or improve their performance, in line with public expectations.

The Board verifies that the risks associated with the construction and operation of regulated facilities are properly assessed and managed by pipeline companies by:

- assessing new facilities applications for associated safety and environmental issues;
- monitoring construction and operation to verify that pipelines meet the standards required by the *Onshore Pipeline Regulations, 1999* as well as other regulatory requirements identified through the application process;
- investigating any failures or incidents that occur, with the intent of preventing similar incidents from recurring; and
- developing regulations and guidelines.

In order to meet its safety and environmental goals, the NEB has also put significant effort into the development of its own environmental and safety management programs. The integration of the

above four activities under the umbrella of the NEB's management programs is an important aspect of effective risk management.

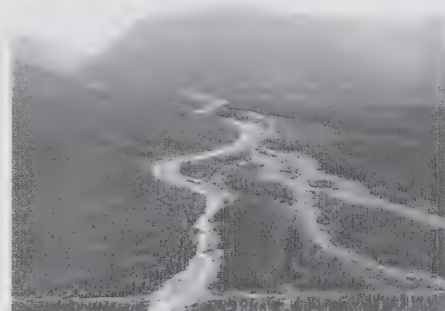
DEVELOPMENT OF ENVIRONMENTAL AND SAFETY MANAGEMENT PROGRAMS

Recognizing that effective management systems are an integral part of managing safety and the protection of the environment, the Board chose to develop its own management system beginning with its Environmental Management Program (EMP). This program is based on ISO 14001 principles, an internationally recognized standard for environmental management systems. Comprising five primary elements, the EMP is helping to focus and integrate the Board's environmental efforts, and to clarify the role of the NEB and its expectations and responsibilities regarding environmental protection.

The release of the NEB's Environmental Policy in September 2000 completed the first element of the EMP. Development of the second phase, the Planning element, is nearing completion. The Planning element focuses on setting environmental objectives, targets and performance indicators that move toward measuring and improving the NEB's performance with respect to environmental protection. In addition, corporate level performance indicators were developed and are being tested. These indicators will assist the NEB in measuring the effectiveness of the environmental programs of NEB-regulated companies.

Also in 2000, the NEB began work on the development of a parallel Safety Management Program. This program will also be based on ISO principles.

A key sub-project linked to the development of both the Environmental and Safety Management Programs is the NEB's Environment and Safety Information Management System. This project is aimed at developing a database for recording and tracking environmental and safety issues relating to the construction and operation of NEB-regulated facilities. The first module of this system was implemented in May 2000. In this module, conditions placed on Board approvals relating to new facilities are tracked for compliance matters. Additional modules related to other environmental and safety matters were added by year-end.



Safety Performance Indicators

Part of the NEB's Safety Management Program is the development of Safety Performance Indicators that will assist in evaluating the effectiveness of safety programs of NEB-regulated companies. It is intended that, collectively, these indicators will identify how well

safety issues are being managed. Data, such as the number of pipeline contact damages per 1000 km of pipeline, will be captured on a calendar year basis and will permit bench-marking, trend analysis and comparison nationally and internationally. The NEB anticipates that the pipeline industry would also use these indicators to benchmark their own performance. In future years, the NEB expects to be able to supplement its reporting of incident data with these new indicators.

REGULATORY DECISIONS AND ENVIRONMENTAL ASSESSMENTS

During the application process, the NEB's mandate is to evaluate related public interest issues. With respect to safety and environmental protection, these issues include the review of engineering design, the assessment of environmental effects and proposed mitigation, and the consideration of land-related issues. Some of the facility applications that have come before the Board in the past year have had notable environmental or safety components.



In September 1999, routine hydrostatic testing of M&NP's Point Tupper Lateral pipeline, before the line was put into service, resulted in a pipeline failure. During its investigation into this occurrence, the Board found that the pipeline material could not be demonstrated to be Canadian Standards Association (CSA) compliant. As a result of the uncertainty associated with this pipe material, the Board subsequently granted leave to open

the Point Tupper Lateral in August 2000 at a pressure significantly below that requested by M&NP.

In October 2000, the NEB revoked its Streamlining Order XG/XO-100-94 and replaced it with Streamlining Order XG/XO-100-2000. The new Streamlining Order incorporates changes made to the CEA Act *Exclusion List Regulations* and experience with previous Streamlining Orders. The Streamlining Order permits projects required for the ongoing operation of NEB-regulated facilities that do not warrant rigorous regulatory oversight to proceed without an application under section 58 of the NEB Act. These projects either do not meet the criteria of a project under the CEA Act or are excluded from the environmental assessment requirements of the CEA Act. Although these projects do not require a separate application to the Board, projects constructed under the Streamlining Order are still subject to the requirements of the NEB's *Onshore Pipeline Regulations, 1999* and may be subject to audit.

In December 2000, the NEB and the Mackenzie Valley Environmental Impact Review Board signed a memorandum of understanding that established a cooperative framework for environmental impact assessment for projects within the jurisdiction of both boards. This furthers the NEB's goals of promoting safety and environmental protection, while also furthering the federal government's goal of harmonizing regulatory requirements where possible.

COMPLIANCE MONITORING

During the construction of a pipeline, NEB field inspectors monitor compliance with:

- the conditions of the project approval;
- the requirements set out in the NEB's *Onshore Pipeline Regulations, 1999*, relevant codes, and the pipeline company's construction safety manual; and
- the commitments set out in the pipeline company's environmental protection plan.

During the construction of the Alliance pipeline, NEB field inspectors also met with landowners when needed to help them resolve construction or reclamation disputes with the pipeline company.

Once a pipeline is in operation, NEB inspectors conduct safety inspections of pipeline facilities, such as pump or compressor stations, on a periodic basis depending on the risk posed by the operating facility. Safety inspections are conducted to determine compliance with the requirements of NEB regulations and the *Canada Labour Code, Part II*. The NEB also conducts inspections along existing pipeline systems to identify whether third party excavation work is being completed in compliance with the NEB's *Pipeline Crossing Regulations*. In addition, NEB inspectors conduct environmental monitoring inspections of operating pipelines to evaluate the success of construction reclamation and to verify that the environment is being properly protected.

In the frontier lands (north of the 60th Parallel), the NEB conducts inspections related to geophysical and drilling programs and production operations to verify compliance with the approved program and relevant regulations. Occupational safety and health matters are also addressed during these inspections.

To increase awareness in the seismic industry of the regulatory requirements when conducting work within 40 metres of federally-

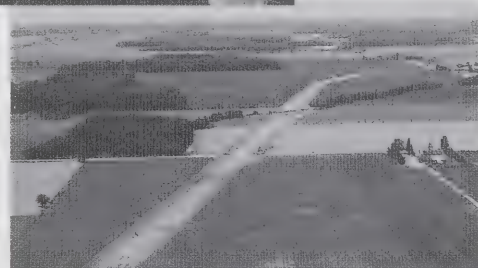
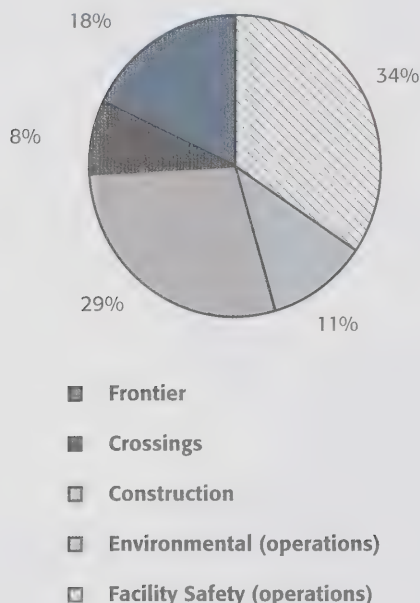


FIGURE 10
Breakdown of Compliance
Inspections



regulated pipelines, the NEB conducted presentations at geophysical conferences and held meetings with industry associations last year, in addition to inspecting seismic work. As a result of the NEB's increased focus on seismic activity, the number of applications to the NEB to conduct seismic work increased from 0 in 1999 to 39 in 2000, and is expected to pass 100 in 2001.

In 2000, the NEB conducted almost 300 compliance inspections, as shown in Figure 10.

The NEB supports a co-operative approach to compliance, where it works with pipeline companies to ensure that environmental commitments and safety requirements are met. As part of this approach, the NEB is placing increased emphasis on appropriate safety and environmental training for construction personnel. Often, NEB field inspectors will conduct presentations for construction crews on safety and environmental requirements and the NEB's responsibility to monitor compliance.

Non-compliance with the NEB's requirements is generally handled in one of two ways. Minor areas of non-compliance that cannot be corrected immediately are recorded by the NEB inspector by receiving an assurance of voluntary compliance (AVC) from the pipeline company. In addition, NEB inspectors will issue a field order when they find a situation that could jeopardize safety or the environment. The company must correct these situations immediately. In 2000, the NEB received 131 AVCs and issued 3 field orders for non-compliant activities. This represents a 27 percent reduction in AVCs received from the previous year. This may be evidence of the NEB's success in increasing the level of compliance during pipeline construction and operation.

In 2000, the NEB began tracking compliance with conditions issued on facility approvals using its Environmental and Safety Information Management System (ESIMS). This system allows conditions to be tracked for compliance and effectiveness (that is, whether the condition resulted in achievement of the desired result). This year, compliance with 386 conditions on 108 facility approvals were tracked using the ESIMS system. Currently, the percentage of identified non-compliances with condition requirements is less than five percent. NEB staff follow up on all identified non-compliances until the issue is resolved.

Once the construction of a pipeline or facility is complete, but before the facility can be put into operation, pipeline companies generally must apply to the NEB for permission to open the facilities. When the Board is satisfied that the pipeline is safe to operate, it will grant approval to open the pipeline. During 2000, the Board issued 163 orders granting leave to open pipelines, pipeline sections or

other facilities. This number represents a 40 percent increase over the previous year, which is largely due to the completion of the 1600 km Canadian portion of the Alliance pipeline.

Management System Audits

Following the release of the *Onshore Pipeline Regulations, 1999* (OPR), which set out the technical and safety requirements for all stages of a pipeline's life cycle, the NEB undertook a series of four pilot audits in mid-2000. The purpose of these pilot audits was to develop and apply appropriate audit procedures and protocols using the new goal-oriented regulations. The approach of these audits is to focus on evaluating the effectiveness of pipeline company management systems, in terms of ensuring that the company's facilities are operated in a safe and environmentally sound manner.

In October 2000, the NEB began conducting OPR management system audits on four companies as part of its overall safety and environmental program. These audits will focus on the companies' emergency response, continuing education and pipeline integrity programs. The audits are expected to be completed in early 2001. Over the next year, the NEB intends to expand the scope of future audits to include additional program elements set out in the OPR.

Public Awareness

On 1-2 May 2000, the NEB conducted its third public awareness workshop. These workshops are designed as a forum for the pipeline industry to share best practices for public awareness, with the goal of developing information that better meets the needs of the public, thereby increasing public safety near pipelines.

For the first time, the workshop was a joint effort between the NEB and the American Petroleum Institute. This joint effort resulted in over 170 attendees from the U.S. and Canada being able to share ideas on providing, monitoring and assessing public awareness programs. In addition, this year the workshop location of Niagara Falls, Ontario was chosen to make the workshop more accessible to regional landowner associations, as well as to industry representatives. Landowners and landowner groups, municipal governments and the construction industry were invited to the workshop. Based on the growing success of these workshops, the next one is being planned for 2002.



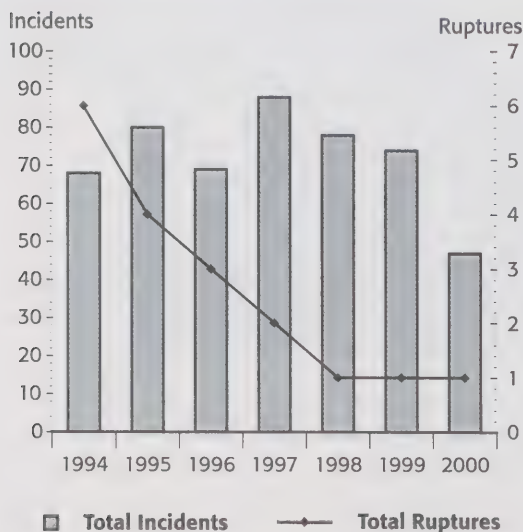
INCIDENT INVESTIGATION

The NEB is continually looking for ways to improve safety and encourages pipeline companies to provide information on pipeline safety performance by requiring companies to immediately report incidents on their systems. The definition of what constitutes an incident is set out in the *Onshore Pipeline Regulations, 1999*.

Even minor incidents can provide indications of the condition of a pipeline or of required improvement to safety programs. Currently, the NEB investigates all reported incidents to determine if any trends are evident and to take action, if necessary, to prevent similar occurrences in the future. In general, the NEB conducts on-site investigations only for incidents that result in death, serious injury or significant releases of hydrocarbons.

Forty-seven incidents were reported in 2000, which is significantly lower than the six-year average of 76 incidents (Figure 11). One factor that may be contributing to the reduction of incidents is the somewhat lower level of construction activity on NEB-regulated pipelines in 2000 than in the previous year. In 2000, five incidents resulted in injuries, with only one of those directly related to construction. This figure is down from the 1999 total of 15 injuries, of which 12 were directly related to construction. Another factor contributing to the decrease in the number of reported incidents is a change in the reporting criteria for incidents resulting from the introduction of the *Onshore Pipeline Regulations, 1999*. However, this change did not materially affect the number of reportable incidents.

FIGURE 11
Pipeline Incidents and Ruptures 1994 to 2000



Of the 47 incidents reported in 2000, over half occurred at controlled areas such as compressor stations or gas plants. Typically, the public is not exposed to the safety risks associated with incidents at these types of controlled areas. Twenty six incidents occurred at compressor or pump stations, eight at gas plants, and the remainder occurred along the pipeline right of way.

Continuing a six-year trend of declining pipeline ruptures, only one pipeline rupture occurred in 2000. This rupture involved Westcoast Energy Inc.'s mainline east of Hope, British Columbia. While no injuries to either the public or company employees resulted, natural gas was released to the atmosphere. The reduction in major pipeline failures has been due to a variety of factors, including increased attention by industry on preventative maintenance, new technology to monitor and repair pipelines, and a decrease in ruptures caused by slope failures.

A notable incident in 2000 was the explosion of a compressor station control building owned by Gazoduc TQM at East Hereford, Quebec on 28 December 2000. The explosion resulted in the serious injury of a TQM employee who was working in the building at the time. Both the NEB and the Transportation Safety Board are investigating the incident to determine the cause of the explosion. This incident was not classified as a rupture as no gas piping was involved.

The NEB verifies that all companies under its jurisdiction have adequate emergency response plans to mitigate any negative effects on personnel safety, public health or the environment resulting from oil spills or natural gas leaks. Response plans are examined to ensure that appropriate procedures are in place. In addition, the NEB encourages and participates in pipeline company-sponsored emergency response exercises.

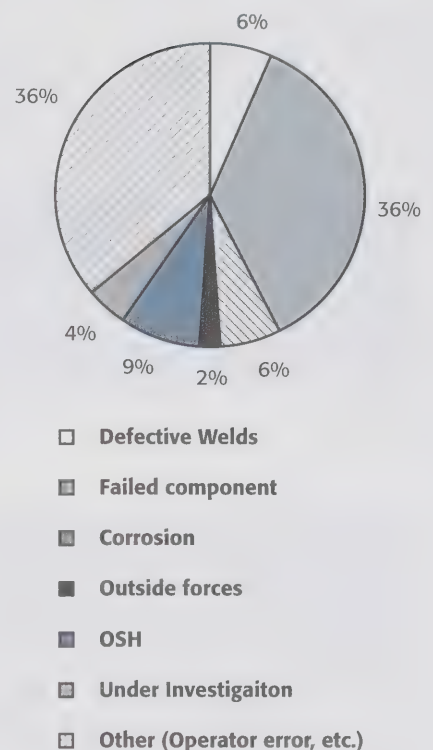
The NEB's primary role during an emergency is to monitor the pipeline company's response, ensuring that all reasonable actions are being taken to protect public safety and the environment. The NEB uses an information tracking system to verify that the company fulfills its remediation responsibilities regarding sites that have been affected by spills or releases. In 2000, 32 spills and releases occurred. However, there were no significant spills reported on NEB-regulated pipelines in 2000, down from four significant spills reported the previous year.

Hazardous occurrences, as defined by the *Canada Oil and Gas Occupational Safety and Health Regulations*, increased from 22 in 1999 to 64 in 2000. Most of this increase resulted from minor spills such as hydraulic fluid and diesel fuel at construction sites in the Fort Liard area. The number of disabling injuries increased from 3.6 per million hours worked in 1999 to 5.3 in 2000, but remained lower than the 1998 level of 7.6 per million hours worked.

DEVELOPMENT OF REGULATIONS AND GUIDELINES

A key activity in promoting safety and environmental protection is the development of regulations. The NEB is continuing the move toward a goal-oriented approach to its regulations, which promotes increased industry responsibility, allows for flexibility and efficiency, and provides opportunities to adopt improved operational and safety techniques in a more timely manner. The NEB's goal-oriented regulations rely heavily on consensus standards, such as those developed by the CSA, and place increased emphasis on risk

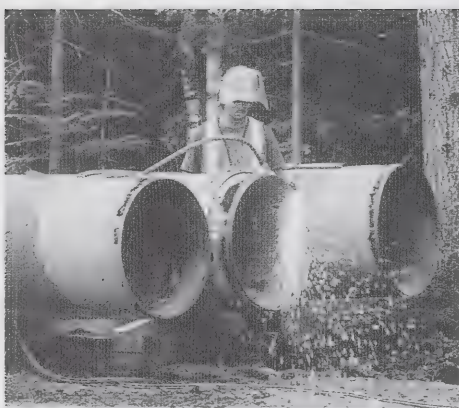
FIGURE 12
Causes of Incidents in 2000



assessment and management systems. Guidance Notes, which are what the NEB considers acceptable practices, are published by the NEB to provide clarity, practical advice and suggestions to facilitate compliance with the regulations.

The NEB is currently developing two new goal-oriented regulations. The first deals with the design, construction, operation and abandonment of federally-regulated gas processing plants. The second deals with damage prevention for buried line pipe. These two regulations are anticipated to come into force in 2001 and 2003, respectively.

The NEB is also active in developing and maintaining regulations regarding exploration and development activities under the COGO Act. These regulations, developed in cooperation with Natural Resources Canada (NRCan), the Canada-Newfoundland Offshore Petroleum Board (CNOPB), the Canada-Nova Scotia Offshore Petroleum Board (CNSOPB), Nova Scotia Department of Natural Resources and the Newfoundland Department of Mines and Energy, ensure common regulatory approaches for activities in the offshore regions, the Northwest Territories and Nunavut. To this end, consultations were continued in 2000 to amend many of the regulations and guidelines under the COGO Act and mirror regulations under the Accord Implementation Acts. The changes introduce goal-oriented regulation to frontier activities.



Consultations were also continued to update the *Oil and Gas Occupational Safety and Health Regulations* under the *Canada Labour Code, Part II*. Discussions were initiated on the revisions to regulations regarding boilers and pressure vessels (*Canada Occupational Safety and Health Regulations - Part V*) under the *Canada Labour Code, Part II*. The NEB also contributed proposed revisions to the *Exclusion List Regulations* under the CEA Act.

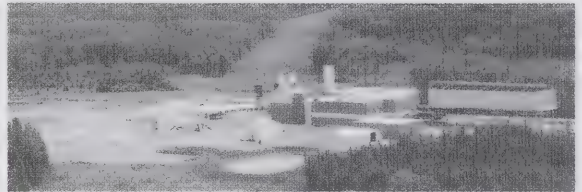
The Board participates with industry, government and stakeholder groups in a number of initiatives to develop consensus-based standards, best practices and common approaches to safety and environmental issues. An example of the NEB's participation in one of these groups is for the revision of the standard for oil and gas pipeline systems, CSA Z662, scheduled for issue in 2003.

Research and Development

The NEB acts as the secretary for the Environmental Studies Research Funds (ESRF) management board, which provides funding for environmental and social projects regarding petroleum exploration, development and production activities on frontier lands. In 2000, the ESRF sponsored workshops on Cumulative

Environmental Effects Assessment and Monitoring on the Grand Banks and Scotian Shelf and Methodologies to Conduct Research on the Effects of Seismic Exploration on the East Coast Fishery. Reports on these workshops are available from the ESRF.

Three new ESRF projects were approved in 2000. These deal with updating the CSA Offshore Structure Standards, identifying ecologically and commercially important areas in the southern Gulf of St. Lawrence and abstracting existing studies and reports related to oil and natural gas development in the North.



Economic Efficiency

The Board's third corporate goal is to ensure that Canadians derive the benefits of economic efficiency. There are three main ways in which the Board has an economic impact:

- through the decisions it renders;
- through the energy market information it provides to Canadians; and
- through the efficiency of its regulatory processes.

In addition, the Board must manage its own expenditures efficiently.

IMPACT OF NEB DECISIONS

The Board attempts to ensure, through its decisions, that there is adequate pipeline capacity to move natural gas and oil to the markets where they are needed. The Board also strives to promote a pipeline transmission network that delivers hydrocarbons in an efficient manner that meets the needs of shippers.

The Board did not deal with any major pipeline facility applications in 2000. However, the year saw the completion of significant new pipeline facilities that were approved by the Board in the previous two years. These included the Alliance and Vector pipelines, which together provide an alternative route for transporting natural gas from western Canada to Ontario and markets further east. In addition, M&NP commenced the first domestic gas deliveries in the Maritimes. These new pipeline routes are connecting buyers to new sources of supply and providing additional capacity and flexibility to move natural gas to Canadian businesses and consumers.

The Canadian pipeline system generally responded well to market demands in 2000. However, toward the end of the year, wholesale gas prices rose more in the Vancouver area than in other regions across the country. This occurred, in part, due to the crisis that developed in the California electricity market, which drove natural gas prices up in all Pacific coast markets. Market participants were also concerned that there was inadequate natural gas pipeline capacity to serve the lower mainland area.

Most tolls and tariffs on major NEB-regulated pipelines are set pursuant to negotiated agreements between the pipelines and their shippers. These agreements usually provide incentives to the pipeline companies to improve their management of costs and provide for increased flexibility in the terms and conditions of service that are offered to shippers. In 2000, the Board approved tolls for M&NP and rendered a decision on the terms and conditions

*Goal 3:
Canadians
derive the
benefits of
economic
efficiency*

under which interruptible service is provided on TransCanada's mainline.

TransCanada experienced some decontracting when the Alliance system came into service late in the year and some shippers did not renew their long-term contracts. TransCanada has been attempting to negotiate a settlement with its shippers on a means of dealing with extra capacity and, more generally, on a tariff structure that is more compatible with the changed circumstances in the natural gas transmission sector. As of the year's end, negotiations were continuing.

ENERGY MARKET INFORMATION

The Board informs the public about energy market trends on an ongoing basis. Providing and interpreting energy market information contributes to the more efficient operation of energy markets and, therefore, helps the Board achieve its goal that Canadians derive the benefits of economic efficiency.

Energy Market Assessments

As part of its energy monitoring, the Board issues EMA reports which provide analyses of the major energy commodities on either an individual or integrated commodity basis. An important aspect of the EMA program is that the Board augments its analysis by consulting parties with an interest in the respective subject areas.



In 2000, the Board issued two EMAs on natural gas. *Canadian Natural Gas Market Dynamics and Pricing* was released in November 2000. This EMA described the price responses to changing supply and demand conditions in the natural gas market. The report concluded that the natural gas market has been functioning so that Canadian requirements for natural gas have been satisfied at fair market prices. The second report entitled *Short-term Natural Gas Deliverability from the Western Canada Sedimentary Basin 2000-2002* was released in December 2000. This report examined the factors that affect natural gas supply over the short term and presented an outlook for deliverability to the year 2002.

In October the Board released an EMA entitled *Canada's Oil Sands: A Supply and Market Outlook to 2015*. This was the Board's first EMA focussing specifically on crude oil. It reviewed the supply of and market for bitumen and synthetic crude oil derived from Canada's oil sands. The report also discussed the early history of oil sands development, the role of science and technology in advancing oil sands development, supply costs, pipeline infrastructure and environmental issues. The study also examined the impact of oil sands development on the natural gas and electricity markets in Canada.

Natural Gas and Electricity Prices - Frequently Asked Questions

In order to provide the public with further information and explanation on developments in natural gas and electricity markets, the Board posted Frequently Asked Questions and answers on these subjects at its Web site. The natural gas questions address the reasons for the pronounced increases in prices in 2000, the underlying supply and demand forces at work in the marketplace and the Board's role in approving natural gas exports. The electricity questions address the regulation of the industry, price formation, a brief overview of the restructuring of electricity markets and the Board's role in approving electricity exports.

Ongoing Monitoring

The Board compiles several statistical reports related to its regulatory role in the oil, gas and electricity industries. Data are compiled on a monthly basis and annual summaries are available back to 1985. Subject areas include: natural gas exports and imports, volumes and prices; exports of propane and butane; crude oil and petroleum product exports; light and heavy crude oil export prices; crude oil supply and disposition; and imports and exports of electricity. The reports are available at www.neb.gc.ca/stats/index.htm.

REGULATORY EFFICIENCY

In order to be an efficient regulator, the NEB must look not only to improving the efficiency of its existing processes, but must also prepare effectively for major future regulatory events, such as applications for major pipelines or significant toll hearings.

As part of its ongoing efforts to increase its regulatory efficiency, the NEB developed and implemented a streamlined internal process for assessing non-hearing facilities applications. Work on this project highlighted the need for establishing standard technical and environmental information requirements. Projects to examine these information requirements commenced in 2000 and will continue in 2001.



In 2000, the NEB also handled an increasing number of applications for exploration and production activity in the Canadian North and continued to prepare for an anticipated northern pipeline application. Preparation for a northern pipeline application included work under the NEB Act and the COGO Act, as well as consultations with other regulators to clarify and streamline the regulatory process for pipelines and associated facilities. In late 2000, the NEB and the Mackenzie Valley Environmental Impact Review Board signed a Memorandum of Understanding to establish a cooperative framework for environ-

mental impact assessment in the Mackenzie Valley. The NEB is actively engaged with other federal departments and regulators in both the Northwest Territories and Yukon in defining future regulatory needs and processes.

Alternative Dispute Resolution Pilot Project

In an effort to improve its own regulatory processes, in March 2000 the Board undertook a pilot project in mediation for landowner objections to the proposed routes of M&NP's Halifax and Saint John laterals. A number of NEB staff underwent training in mediation and a Practice Direction on mediation was drafted. Landowners who objected to the route were offered the option of mediation. The company and two of the objecting landowners agreed to mediate. The parties viewed a mediation option as a positive addition to the process, although both parties reached agreement prior to the mediation taking place.

The Board is currently engaged in a consultation process regarding the Practice Direction, as well as soliciting ideas from stakeholders on the use of alternative dispute resolution in other NEB applications. The Board expects to make the results of that consultation available in March 2001.

NEB's Financial Spending

Since 1991, up to 90 percent of the National Energy Board's operating costs have been recovered from the regulated community rather than paid for from public revenues. Table 7 shows the NEB's expenditure and staff levels for the last five fiscal years. Additional information on budgets and plans may be found in the *NEB 2000-01 Main Estimates, Part II* and the *2000-01 Report on Plans and Priorities*, both of which are available on the NEB's Web site at www.neb.gc.ca.

TABLE 7
Historical Expenditures and Staffing

Fiscal Year (April 1 to March 31)	Expenditures \$000	Full-Time Equivalents
1996 - 1997	26 855	272
1997 - 1998	28 048	264
1998 - 1999	53 187 ^(a)	277
1999 - 2000	26 900	286
2000 - 2001 ^(b)	27 366	289

(a) In 1998 the NEB made payments of \$22.2 million for out-of-court settlements with the energy industry relating to relocation costs of the NEB from Ottawa to Calgary

(b) Estimate.

Public Engagement

The NEB's fourth goal recognizes the increasing importance of effective public participation in the Board's business. This effort complements the federal government's initiative to increase citizen engagement in all of its programs.

PUBLIC INFORMATION SERVICES

The NEB realizes that, in order to effectively participate in Board matters, Canadians need access to easy-to-understand, timely and targeted information. With this in mind, the Board continues to improve its public information processes by making them more easily accessible and understandable. It is also committed to enhancing electronic access to key Board information and regulatory processes through its Internet Web site and the Electronic Regulatory Filing initiative.

Communications Instruments

Web Site

During the past year, the Board conducted an experimental test of broadcasting a public hearing using audio streaming through its Internet site. In previous years the hearing audio had been available by telephone through a limited number of lines to the NEB's Hearing Room. Plans are being made to improve access to hearings through the continued use of audio streaming. This service is available on our Web site at www.neb.gc.ca.

The NEB's Web site has continued to grow to meet the needs of Canadians interested in NEB matters. Information is regularly posted to the web about the Board's regulatory role, energy market assessment reports, statistical information, frontier lands information, pipeline safety and tolls, as well as current regulatory proceedings including Hearing Orders, Reasons for Decision and the Regulatory Agenda. The NEB is now posting transcripts of all public hearings to the site within three working hours of the end of the hearing day, providing interested members of the public with quick and easy access to this service.

News Releases

The Board issues news releases concerning matters coming before it, including public hearings, decisions, public consultations and major announcements. In 2000, the Board issued 40 news releases to the media. The Board encourages clients to access news releases via the web site, although they are also available from the library, by fax and by mail.

*Goal 4:
The NEB
meets the
evolving
needs of the
public to
engage in
NEB matters.*

Regulatory Agenda

The NEB publishes a monthly *Regulatory Agenda*, available on its Web site and in paper copy. Published since 1982, the *Regulatory Agenda* provides updated information about regulatory applications and other Board matters.

Information Bulletins

The Board publishes a series of information bulletins and brochures about its activities. During the past year, a major updating of these public information tools was undertaken. Updated documents will be available to the public throughout the early part of 2001. A complete listing of the Board's information bulletins can be found in Supplement III of this report.

Electronic Regulatory Filing

The Board is in the implementation phase of its Electronic Regulatory Filing initiative. This initiative is being undertaken in collaboration with the Ontario Energy Board and representatives of the regulated energy industry. The system will be available through the NEB's Web site and will provide a method of creating, storing, exchanging, searching and referencing regulatory information. Electronic Regulatory Filing has been undergoing tests through various pilot projects and procedures continue to be modified to incorporate the results of these projects.

Toll Free Number

The Board also recognizes that effective communication through these various media does not replace the need for personal interaction. Therefore, the Board welcomes personal communication from the public via its toll free number at 1-800-899-1265. Over the course of 2000, the NEB received nearly 3 000 calls on the 1-800 toll free line.

PUBLIC CONSULTATION

In addition to broadening the options for participation, the NEB is taking steps to make its processes more understandable to the people who would like to participate in them. To this end, the NEB holds public information meetings and public consultations when significant interest in a project is shown by the public. The purpose of the information meetings is to assist people to prepare for meaningful participation in the public hearing. NEB staff members attend these meetings to discuss the environmental assessment and regulatory review processes that will be conducted for the project. During 2000, the Board held meetings in Ontario to discuss the Canadian Millennium



Pipeline project, and in British Columbia to discuss the Georgia Strait Crossing project and the Sumas Energy 2, Inc. International Power Line project.

As one of its goals, the Board is continuing to improve its public engagement process and is planning several sessions in Canada's North as preparations are made for a northern pipeline application. In anticipation of this application, Board Members visited the North this past summer to begin dialogue with key stakeholders and to gain a better understanding of local issues that will need to be addressed during the regulatory process.

BOARD MEMBERS' ACTIVITIES

Equally important to being prepared and accessible for regulatory proceedings is the NEB's need to be well informed of regional perspectives and emerging issues. To further its role as a national regulator, the Board maintains regular contact with a range of stakeholders and conducted a number of visits in 2000 to consult with key groups.

Visit to Alaska

A delegation of two Board Members and two staff, along with representatives of Natural Resources Canada, the Northern Pipeline Agency and Canadian Consulates General, visited Alaska in mid-July 2000. The purpose of the trip was to learn about potential natural gas developments which could impact regulatory processes at the Board and to develop a working relationship with key parties which may be involved in a regulatory process before the Board.

The Canadian delegation met with various representatives of the State of Alaska and with three major producers at Prudhoe Bay. These meetings followed a tour of the production facilities at Prudhoe Bay.



Visit to the Yukon and Northwest Territories

A delegation of three Board Members and two staff visited the Yukon and Northwest Territories during the third week of August. Their objective was to increase their familiarity with NEB-regulated northern oil and gas activities and to meet with local representatives, in order to better understand issues and opportunities from northern and aboriginal perspectives.



The delegation met with regional, territorial and federal government and regulatory officials in the Yukon and Northwest Territories. Meetings were also held with representatives of the Council of Yukon First Nations in Whitehorse, the Deh Cho First Nation in Kakisa, the Sahtu in Norman Wells and the Gwich'in and the Inuvialuit in Inuvik. In addition, the delegation toured a number of northern pipelines and facilities.

The meetings with territorial and federal government officials were informative and helped initiate and renew relationships for the Board's future work in the North. Meetings with First Nations chiefs gave the Board an appreciation of the perspectives of aboriginal people with respect to the opportunities and concerns associated with development activity in the North.

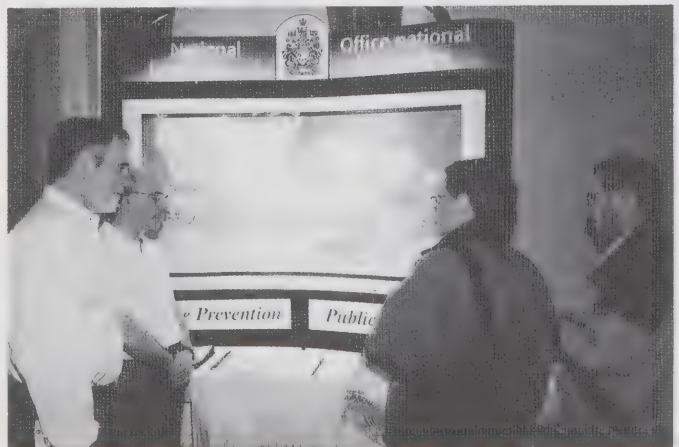
Visit to Montreal

Board Members, along with the Chief Operating Officer, General Counsel and the Secretary, travelled to Montreal during the last week of November. The purpose of the trip was to meet informally with NEB stakeholders to share information, discuss subjects of common interest and build relationships.

During the week the Board met with the Régie de l'énergie, Hydro Québec, Gaz Métropolitain Inc., Fédération Canadienne de l'entreprise indépendante, Canadian Gas Association, Industrial Gas Users Association, Gouvernement du Québec, Mouvement au Courant, Association Pipeline, Option Consommateurs, Pipe-Lines Montréal, Grand Council of the Crees and Trans Québec & Maritime Pipeline Inc.

LANDOWNER ENGAGEMENT

An important part of the Board's work is its interaction with the landowners whose properties are crossed by federally-regulated pipelines. Pipeline companies bear the primary responsibility for building a relationship with landowners who are affected by the construction and operation of pipeline facilities. If that relationship breaks down, however, the Board will work with both parties to remedy the situation. The Board expects that the number of landowner contacts may increase in the future due to increased public awareness, particularly among landowners, regarding the NEB's requirements for protection of the environment and public safety.



The NEB responds to landowner concerns regarding impacts caused by the construction and operation of pipeline facilities. In most cases, the NEB ensures that the pipeline company is made aware of the concern and encourages the company to remedy the situation. The Board may also gather additional information from the company, inspect the property and request that the company take specific actions to remedy the concern, if the company does not do so voluntarily. During 2000, the NEB received 55 complaints from landowners arising from land rights, operational and construction issues. While this number is smaller than the 81 received during 1999, less construction activity took place in 2000.

During the latter part of 1999, the NEB conducted a pilot landowner survey in order to gauge landowners' satisfaction with pipeline construction and reclamation. Over 100 landowners were interviewed using a variety of techniques. While the results of the survey showed that over 90 percent of the landowners surveyed were satisfied with pipeline construction once clean-up was completed, the NEB also received valuable feedback on other processes that could be improved. As a result of this information, in 2000 the NEB undertook to revise some of its public information documents and improve its public information sessions.



During the winter of 2000, the NEB started work on a second landowner survey in an effort to gather more complete statistical information. Over 400 landowners will be contacted to participate in a telephone survey covering a broad range of the NEB's interests. Results from this survey are expected in April 2001.

A Wealth of Experience

The National Energy Board is made up of eight full-time members who were appointed based on their wide range of expertise in energy matters and public policy. Our multi-disciplinary team reflects the diverse perspectives and the practical knowledge required for making decisions on energy projects in the interests of Canadians and advising the Government of Canada on energy issues. Members have private and public sector experience in economics, engineering, environment, finance, law, public participation, safety and science.

Kenneth W. Vollman - Chairman

A native of Saskatchewan, Mr. Vollman has a Master's degree in Mechanical Engineering from the University of Saskatchewan and is a member of the Association of Professional Engineers of Alberta.

Mr. Vollman has spent his career working in the energy sector gaining his practical experience with oil and gas production while working in the private sector. During his career at the NEB, Mr. Vollman gained experience in energy supply and demand, pipelines, energy regulatory issues, and management. Most recently, he was designated as Chairman in 1998 after serving as a Member and Vice-Chairman.

Over the past 30 years, Mr. Vollman has authored and presented numerous papers at Canadian and international conferences.



Judith A. Snider - Vice-Chairman

Originally from Ontario, Ms. Snider has a Bachelor of Laws degree from the University of Calgary and a Bachelor of Science degree (mathematics) from Carleton University. She is a member of the Alberta bar.

Ms. Snider was formerly General Counsel at the National Energy Board, bringing with her 11 years of legal experience at the Calgary law firms of Code Hunter and Macleod Dixon.



Henry A. Regier

On 8 December 1999, Henry A. Regier was appointed a temporary Board Member for the Joint Panel Review of the Canadian Millennium Pipeline Project.



Rowland J. Harrison

Originally from Australia, Mr. Harrison has a Master of Laws degree from the University of Alberta and is a member of the bars of Nova Scotia, Ontario and Alberta. He has gained extensive advisory, consulting and research experience in various aspects of energy regulation and policy during his career.

As a Professor of Law at various Canadian universities, Mr. Harrison taught Oil and Gas Law, Advanced Petroleum Law, Constitutional Law and Administrative Law. He has held senior management positions with a number of organizations including Canada Oil and Gas Lands Administration, the Canadian Institute of Resources Law, the Institute for Research on Public Policy and the Dalhousie Institute of Environmental Studies. Most recently, he was a partner in the Calgary office of Stikeman Elliott, a national and international Canadian law firm.



John S. Bulger

Originally from Manitoba, Dr. Bulger has a Ph.D. in Physical Chemistry from York University in Toronto as well as a Graduate Management Diploma from McGill University in Montreal. He has experience in procurement, operations, planning, regulatory affairs and providing advice on energy issues.

Prior to being appointed to the Board, Dr. Bulger held the position of Senior Manager, Regulatory Affairs at Maritimes and Northeast Pipeline in Halifax, Nova Scotia. He also spent almost 20 years at Gaz Métropolitain in various senior management positions. Dr. Bulger began his career at DuPont of Canada Ltd.

Dr. Bulger is currently on the Executive Committee for the Canadian Association of Members of Public Utility Tribunals and is a member of the Chemical Institute of Canada.



Jean-Paul Théorêt

A native of Quebec, Mr. Théorêt has a diverse educational and professional background in business, economics, law and energy regulation.

Mr. Théorêt was a Commissioner of the Régie de l'énergie in Quebec for eight years. He was elected to the Quebec National Assembly in 1985 where he served as Parliamentary Assistant to the Minister of Industry, Trade and Technology as well as Vice Chairman of the Committee on Labour and the Economy.

Mr. Théorêt has 30 years of business experience serving as an Executive Vice President of a large food distribution company and owner of food stores in Quebec. He was active in the Laval business networking community and served as Chairman of the Laval Chamber of Commerce.

Elizabeth (Liz) Quarshie

Originally from Ghana, Ms. Quarshie has a Master's Degree in Environmental Engineering from Washington State University. She is a member of the Association of Professional Engineers and Geoscientists of Saskatchewan and is a Certified Professional Environmental Auditor.

Ms. Quarshie has over 15 years experience in the energy sector and has held a portfolio of senior management positions at Cogema Resources Inc. and Cameco in Saskatoon, and directed programs such as occupational health and safety, environmental impact assessments, compliance and public affairs. She also has extensive industry experience in project planning and design, development, implementation, monitoring and decommissioning.

Ms. Quarshie also has experience in radiation protection, air pollution control, solid and hazardous waste management, water and wastewater treatment, research and evaluation, environmental management systems, audits and community development.



Deborah W. Emes

Originally from Saskatchewan, Ms. Emes has a Master of Arts in Economics from the University of Calgary and is a Chartered Financial Analyst. She has practical and academic expertise in providing regulatory, economic and market advice.

Ms. Emes has held positions in the public and private sectors, including Manager, Strategic Services for the British Columbia Utilities Commission. She has also taught rate design and cost of capital training seminars for the Canadian Association of Members of Public Utility Tribunals.



Carmen L. Dybwad

A native of Saskatchewan, Dr. Dybwad has a Ph.D. in Regional Planning and Resource Development from the University of Waterloo. She has an educational background in economics as well as practical and academic expertise in public participation, resource development and the electricity sector.

Dr. Dybwad has held several positions with the Government of Saskatchewan and the Saskatchewan Power Corporation, including Manager of Environmental Policy and Planning. Most recently, she was an assistant professor at the University of Regina where she taught classes in ecological economics, sustainable development and public administration.



Supplement I

THE BOARD'S MANDATE

The National Energy Board is an independent regulatory tribunal established in 1959. It reports to Parliament through the Minister of Natural Resources Canada (the Minister). The Board is a court of record and has the powers of a superior court with regard to attendance at hearings, the swearing in and examining of witnesses, the production and inspection of documents and the enforcement of its orders. At the end of 2000, the NEB had eight permanent board members, of a possible total of nine. Permanent board members are appointed for a term of seven years.

The Board's regulatory powers under the NEB Act include granting authorizations for: the construction and operation of interprovincial and international oil, gas and commodity pipelines; the construction and operation of international and designated interprovincial power lines; the setting of tolls and tariffs for oil and gas pipelines under its jurisdiction; the export of oil, natural gas and electricity, and the import of natural gas. The Board also has regulatory powers under the COGO Act and certain provisions of the *Canada Petroleum Resources Act* (CPR Act) for oil and gas exploration and activities on frontier lands not otherwise regulated under joint federal/provincial accords.

The Board's mandate includes providing expert technical advice to the Canada-Newfoundland Offshore Petroleum Board, Canada-Nova Scotia Offshore Petroleum Board, Natural Resources Canada, and Indian and Northern Affairs Canada.

Under the CEA Act, the Board is responsible for conducting environmental assessments of the planning, construction, operation, maintenance and abandonment of energy projects within its jurisdiction. Under the NEB Act and the COGO Act, the Board's environmental activities have evolved into three distinct phases: evaluating the potential environmental effects of proposed projects; monitoring and enforcing terms and conditions attached to project approvals; and the ongoing monitoring of operations.

The Board is responsible for ensuring the safe operations of the pipelines under its jurisdiction and the Board's inspectors are appointed Safety Officers for the administration of the *Canada Labour Code, Part II*.

The Board provides advice to the Minister on matters relating to its regulatory expertise upon the Minister's request. The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*. Below is a listing of acts, regulations, rules and guidelines under which the Board operates or has responsibilities.

Acts

National Energy Board Act
Canada Labour Code, Part II
Canada Oil and Gas Operations Act
Canada Petroleum Resources Act
Canadian Environmental Assessment Act
Energy Administration Act
Mackenzie Valley Resources Management Act, c.25
Northern Pipeline Act

Regulations and Orders Pursuant to the NEB Act

Gas Pipeline Uniform Accounting Regulations
National Energy Board Act Part VI (Oil and Gas) Regulations
National Energy Board Cost Recovery Regulations
National Energy Board Electricity Regulations
National Energy Board Export and Import Reporting Regulations
National Energy Board Order No. M0-62-69, CRC, Vol. XI, c. 1055
National Energy Board Pipeline Crossing Regulations, Part I
National Energy Board Pipeline Crossing Regulations, Part II
General Order No. 1 Respecting Standard Conditions for Crossings
by Pipelines, (December 14, 1978)
General Order No. 2 Respecting Standard Conditions for Crossings
of Pipelines, (December 14, 1978)
National Energy Board Rules of Practice and Procedure , 1995
National Energy Board Substituted Service Regulations
Oil Pipeline Uniform Accounting Regulations, CRC, Vol. XI, c. 1058
Oil Product Designation Regulations
Onshore Pipeline Regulations, 1999
Pipeline Arbitration Committee Procedure Rules, 1986
Power Line Crossing Regulations
Proclamation Extending the Application of Part VI of the Act to Oil,
May 7, 1970
Toll Information Regulations
Section 58 Streamlining Initiative - Order XG/XO-100-2000

Guidelines and Memoranda of Guidance pursuant to the NEB Act

Adherence to Environmental Information Requirements under the
Board's Guidelines for Filing Requirements (23 December 1997)
Filing of Supply Information in Compliance with the Board's Part VI
(Oil and Gas) Regulations (16 May 1997)
Filing Procedures for Section 104 Right of Entry Order Applications
(27 October 1999)
Financial Regulatory Audit Policy of the National Energy Board (23
February 1999)
Guidance Notes for the Onshore Pipeline Regulations, 1999
(7 September 1999)
Guidelines for Filing Requirements (22 February 1995)
Guidelines for Negotiated Settlement of Traffic, Tolls and Tariffs
(23 August 1994)

Guidelines Respecting the Environmental Information to be Filed by Applicants for Authorization to Construct and Operate Gas Processing and Straddle Plants, Liquid Natural Gas (LNG) Plants and Terminals, Natural Gas Liquids (NGL), Liquid Propane Gas (LPG) and Butane Plants and Terminals, under Part III of the *National Energy Board Act* (26 June 1986)

Memorandum of Guidance - Concerning Full Implementation of the September 1988 Canadian Electricity Policy (Revised 26 August 1998)

Memorandum of Guidance - Fair Market Access Procedure for the Licensing of Long-term Exports of Crude Oil and Equivalent (17 December 1997)

Memorandum of Guidance - Regulation of Group 2 Companies (6 December 1995)

Memorandum of Guidance - Retention of Accounting Records by Group 1 Companies Pursuant to Gas/Oil Pipeline Uniform Accounting Regulations (30 November 1994)

Performance Measures filed as part of Year-end Quarterly Surveillance Reports (26 January 1996)

Regulations Pursuant to the COGO Act

Canada Oil and Gas Certificate of Fitness Regulations

Canada Oil and Gas Diving Regulations

Canada Oil and Gas Drilling Regulations

Canada Oil and Gas Geophysical Operations Regulations

Canada Oil and Gas Installations Regulations

Canada Oil and Gas Operations Regulations

Canada Oil and Gas Production and Conservation Regulations

Oil and Gas Spills and Debris Liability Regulations

Regulations Pursuant to the CPR Act

Frontier Lands Petroleum Royalty Regulations

Frontier Lands Registration Regulations

Regulations Pursuant to the CEA Act

Comprehensive Study List Regulations

Exclusion List Regulations

Federal Authorities Regulations

Inclusion List Regulations

Law List Regulations

Projects Outside Canada Environmental Assessment Regulations

Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements

Guide to the Preparation of a Comprehensive Study for Proponents and Responsible Authorities (May 1997)

Regulations Pursuant to the Canada Labour Code

Oil and Gas Occupational Safety and Health Regulations

Oil and Gas Occupational Safety and Health Guidance Notes
(April 1992)

Regulations Pursuant to the MVRM Act

Exemption List Regulations

Mackenzie Valley Land Use Regulations

Preliminary Screening Requirements Regulations

Environmental Impact Assessment in the Mackenzie Valley: Interim Guidelines

Regulations Pursuant to the Northern Pipeline Act

Northern Pipeline Notice of Objection Regulations

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for Northern British Columbia

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the Province of Alberta

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the Province of Saskatchewan

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for Southern British Columbia

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the Swift River Portion of the Pipeline in the Province of British Columbia

Order Designating the Minister for International Trade as Minister for Purposes of the Act

Transfer of Duties, in Relation to the Pipeline, of Certain Ministers Under Certain Acts to the Member of the Queen's Privy Council for Canada Designated as Minister for Purposes of the Act

Transfer of Duties, in Relation to the Pipeline, of the National Energy Board Under Parts I, II and III of the Gas Pipeline Regulations to the designated Minister for Purposes of the Act

Transfer of Powers, Duties and Functions (Kluane National Park Reserve Lands) Order

Transfer of Powers, Duties and Functions (Territorial Lands) Order

Regulations Pursuant to the Territorial Lands Act

Canada Oil and Gas Land Regulations

Frontier Guidelines

Guidance Notes for Applicant - Applications for Declaration of Significant Discovery and Commercial Discovery (January 1997)

Guidance Notes for the Canada Oil and Gas Drilling Regulations

Guidance Notes for the Canada Oil and Gas Diving Regulations

Guidelines Respecting Physical Environmental Programs During Petroleum Drilling and Production Activities on Frontier Lands (April 1994)

Offshore Waste Treatment Guidelines (September 1996)

Supplement II

COMPANIES REGULATED BY THE NEB

The following pipeline companies and electric power entities own or operate interprovincial or international pipelines or power lines under the NEB's jurisdiction. The pipeline companies have been divided into two groups. Group 1 Gas and Oil Pipelines are the major pipeline companies which are subject to active regulatory oversight by the NEB. Group 2 consists of all other pipeline companies under the NEB's jurisdiction.

For purposes of cost recovery, there are three classifications: large, intermediate and small. The criteria for determining a company's classification is based on its size, throughput and cost of service.

Group 1 Gas Pipelines

Alliance Pipeline Ltd.
Foothills Pipe Lines Ltd.
Maritimes and Northeast Pipeline Management Ltd.
TransCanada PipeLines Limited
TransCanada PipeLines Limited, B.C. System
Trans Québec & Maritimes Pipeline Inc.
Westcoast Energy Inc.

Group 1 Oil and Products Pipelines

Cochin Pipe Lines Ltd.
Enbridge Pipelines Inc.
Enbridge Pipelines (NW) Inc.
Trans Mountain Pipe Line Company Ltd.
Trans-Northern Pipelines Inc.

Group 2 Gas Pipelines

AEC Suffield Gas Pipeline Inc.
AltaGas Transmission Inc.
Amber Energy Inc.
ANG Gathering & Processing Ltd.
Canadian-Montana Pipe Line Company
Canadian Natural Resources Ltd.
Centra Transmission Holdings Inc.
Chief Mountain Gas Co-op Ltd.
Crowsnest Pipeline Project
CXY Energy Marketing
Encal Energy Ltd.
Enbridge Consumers' Gas Limited
Ethane Shippers Joint Venture
Fletcher Challenge Energy Canada Inc.
Forty Miles Gas Co-op Ltd.

Huntingdon International Pipeline Corporation
Husky Energy Inc.
ISH Energy Ltd.
Many Islands Pipe Lines (Canada) Limited
Murphy Canada Exploration Ltd.
Mid-Continent Pipelines Limited
Minell Pipeline Ltd.
Mobil Oil Canada Ltd.
Niagara Gas Transmission Limited
Northstar Energy Corporation
Novacor Chemicals (Canada) Ltd.
Olympia Energy Inc.
Paramount Resources
Peace River Transmission Company Limited
Penn West Petroleum Ltd.
Petrorep Resources Ltd.
Pioneer Natural Resources Canada Inc.
Portal Municipal Gas Company Canada Inc.
Quest Oil and Gas Ltd.
Ricks Nova Scotia Co.
Sable Offshore Energy Incorporated
Samsom Canada Ltd.
St. Clair Pipelines Ltd.
Star Oil & Gas Ltd.
Suprex Energy Corporation
Union Gas Limited
Vector Pipeline Limited Partnership
Williams Energy (Canada) Inc.
167496 Canada Ltd.
177293 Canada Ltd.

Group 2 Oil and Products Pipelines

Aurora Pipe Line Company
Canadian Midstream Pipeline Limited Partnership
Conoco Canada Ltd.
Duke Energy Midstream Services
Express Pipeline Ltd.
Enbridge Pipelines (Westspur) Inc.
Federated Pipe Lines (Northern) Ltd.
Genesis Pipeline Canada Ltd.
Gibson Petroleum
Husky Oil Operations Ltd.
Husky Border Pipelines Ltd.
Imperial Oil Resources Limited
Manito Pipelines Ltd.
Montreal Pipe Line Limited
Murphy Oil Company Ltd.
Pipestone Pipelines Ltd.
Pouce Coupé Pipe Line Ltd.
Rigel Oil and Gas Ltd.
SCL Québec Pipeline Inc.
SCL Pipeline Inc.

Sun-Canadian Pipe Line Company Limited
Wascana Pipe Line Ltd.
Yukon Pipelines Limited

Commodity Pipelines

E.B. Eddy Forest Products Ltd.
Fraser Incorporated
Genesis Pipeline Canada Ltd.
Penn West Petroleum Ltd.
Souris Valley Pipeline Limited
Stone Consolidated Corporation

Electric Power Utilities and Others

British Columbia Hydro and Power Authority
Canadian Niagara Power Inc.
The Canadian Transit Company
Cominco Ltd.
Cornwall Electric
The Detroit and Windsor Subway Company
Farms (including cottage and isolated loads)
Fraser Paper Inc. (Canada)
Hydro-Québec
Hydro One Networks Inc.
Lac La Croix Power Authority
Maine and New Brunswick Electrical Power Co.
Manitoba Hydro
New Brunswick Power Corporation
Ontario Power Generation Inc.
PDI Canada Inc.
Roseau Electric Cooperative Inc.
Saskatchewan Power Corporation
St. Clair Tunnel Company
Stone-Consolidated Corporation
West Kootenay Power Ltd.

Supplement III

DOCUMENTS

Information Bulletins

The Board publishes information bulletins on the subjects listed below:

1. Pipeline Route Approval Procedures
 2. The Public Hearing Process
 3. Non-Hearing Procedures
 4. How to Participate in a Public Hearing
 5. The Board's Publications
 6. Traffic, Tolls and Tariffs
 7. The National Energy Board Library
 8. Electricity
 9. Protection of the Environment
 10. Pipeline Tolls and Tariffs: A Compendium of Terms
 11. The Frontier Information Office
 12. Pipeline Safety
- Pipeline Regulation: An Overview for Landowners and Tenants

MAJOR DOCUMENTS PUBLISHED IN 2000

Pipeline Facilities

- Shiha Energy Transmission Ltd.
Pursuant to Section 58 of the NEB Act for the Liard Pipeline Project
Reasons for Decision, January 2000
- Pipestone Pipelines Ltd.
Operation of Pipeline Facilities, OHW-1-99
Reasons for Decision, February 2000
- AEC Suffield Gas Pipeline Inc.
North Suffield Pipeline, GH-2-2000
Reasons for Decision, August 2000
- Trans-Northern Pipelines Inc.
Suspension of Service on the Don Valley Lateral, MH-3-2000
Reasons for Decision, November 2000
- Ricks Nova Scotia Co.
Ladyfern Pipeline Project, GH-3-2000
Reasons for Decision, 20 December 2000

Tolls and Tariffs

- TransCanada PipeLines Limited
Interruptible Transportation and Short Term Firm
Transportation Tariff Amendments, RH-1-99
Reasons for Decision, April 2000

Maritimes & Northeast Pipeline
Management Ltd.
Tolls, RH-1-2000
Reasons for Decision, August 2000
Rate of Return
on Common Equity (ROE) for 2001
Letter Decision, 8 December 2000

Gas Exports

Husky Oil Operations Limited
Amendment of Licence GL-114,
GHW-1-2000
Letter Decision, April 2000

Electricity

Canadian Niagara Power Company Limited
Electricity Export Permits
Letter Decision, 17 February 2000
Engage Energy US, L.P.
Electricity Export Permits
Letter Decision, 17 February 2000
Entergy Power Marketing Corp.
Electricity Export Permits
Letter Decision, 9 March 2000
Sempra Energy Trading Corp.
Electricity Export Permits
Letter Decision, 25 May 2000
Columbia Power Corporation
Electricity Export Permits
Letter Decision, 2 June 2000
CMS Marketing, Services and Trading Company
Electricity Export Permits
Letter Decision, 29 June 2000
Candela Energy Corporation
Electricity Export Permits
Letter Decision, 31 August 2000
Idaho Power Company
Electricity Export Permits
Letter Decision, 31 August 2000
TransAlta Energy Marketing Corp.
Electricity Export Permits
Letter Decision, 19 October 2000

Other

Regulatory Agenda - 1 April (covering January, February and March 2000), April, May, June, July, August, September, October, November and December 2000
Excavation and Construction Near Pipelines Update, January 2000
National Energy Board, 1999 Annual Report - April 2000

Memorandum of Understanding on Assessment Process for the Georgia Strait Crossing Pipeline Project,
Jointly signed by the National Energy Board, Fisheries and Oceans Canada and British Columbia Environment Assessment Office, May 2000

Forty Years in the Public Interest:

A History of the National Energy Board, June 2000

Joint Report released by the National Energy Board, the Oil and Gas Commission of British Columbia and the British Columbia Ministry of Energy and Mines titled *Analysis of Horizontal Gas Well Performance in British Columbia*

Report titled *Northeast British Columbia, Natural Gas Resource Assessment 1992-1997*, October 2000

Canada's Oil Sands: A Supply and Market Outlook to 2015,

An Energy Market Assessment - October 2000

Canadian Natural Gas Market - Dynamics and Pricing

An Energy Market Assessment - November 2000

Memorandum of Understanding between the Mackenzie Valley Environmental Impact Review Board and the National Energy Board - December 2000

Short-term Natural Gas Deliverability from the Western Canada Sedimentary Basin 2000 - 2002

An Energy Market Assessment - December 2000

National Energy Board - 2000-2001 Estimates Part III - Report on Plans and Priorities

NEB Environmental Policy and Environmental Management Program - September 2000

Supplement IV

LEGAL PROCEEDINGS

1. **The Industrial Cape Breton Community Alliance Group on the Sable Gas Project (the Alliance) v. Sable Offshore Energy Project et al (Application dated 25 November 1997)**

Federal Court Trial Division

Federal Court of Appeal

Applications were filed by the Alliance in both the Trial and Appeal Divisions of the Federal Court of Canada for judicial review of the Joint Public Review Panel Report dated 27 October 1997, and the Report of the Commissioner for the Canada-Nova Scotia Offshore Petroleum Board dated 27 October 1997. The review sought to set aside and refer the reports back to the Joint Panel and the Commissioner to direct Sable Offshore Energy Project to file a socio-economic impact study incorporating an economic cost-benefit analysis and the environmental effects of the project on Cape Breton. Proceedings were consolidated in the Federal Court, Trial Division and the application was heard in May 1999 in Halifax.

Decision: On 17 October 2000, the Federal Court Trial Division dismissed the judicial review application.

2. **British Columbia Wildlife Federation and The Steelhead Society of British Columbia (BC Wildlife et al) v. British Columbia Hydro and Power Authority (BC Hydro) (Application dated 6 January 1999)**

Federal Court of Appeal

The BC Wildlife et al. filed an application with the Federal Court of Appeal for leave to appeal a decision of the Board issuing an export permit to BC Hydro allowing it to undertake certain arrangements for the export of electricity. Leave to appeal was granted by the Court and a Notice of Appeal was served on the Board on 19 May 1999.

On 2 September 1999, the Federal Court of Appeal ordered that this appeal be consolidated with the appeal of Athabasca Chipewyan First Nation (see below).

Decision: This matter has been set down for hearing commencing 14 February 2001.

3. Athabasca Chipewyan First Nation v. British Columbia Hydro and Power Authority (BC Hydro)

Federal Court of Appeal

The Athabasca Chipewyan First Nation filed an application with the Federal Court of Appeal for leave to appeal a decision of the Board dated 6 January 1999 in which it issued an export permit to BC Hydro allowing it to undertake certain arrangements for the export of electricity. Leave to appeal was granted by the Court and a Notice of Appeal was served on the Board on 1 June 1999.

Decision: This matter has been set down for hearing commencing 14 February 2001.

4. Canadian Forest Oil Limited (Canadian Forest) v. Chevron Canada Resources and Ranger Oil Limited (Chevron et al.)

Federal Court of Appeal

On 24 January 2000, Canadian Forest filed a judicial review application in the Federal Court of Appeal in respect of a Commercial Discovery Declaration (CDD) relating to the Fort Liard K-29 gas well issued by the Board to Chevron et al. on 5 January 2000. The application seeks to quash the Board's decision on the grounds that the Board breached the rules of natural justice and procedural fairness by issuing the CDD before the 30-day waiting period prescribed under the *National Energy Board Act* had run its course and by failing to include Canadian Forest in the Board's list of directly affected parties. Canadian Forest is also seeking interim relief to restrain the Board from issuing any further permits or approvals relating to the development of the area covered by the CDD.

In February 2000, the Board filed with the Court the public portions of the record. Canadian Forest requested that the application and technical information filed by Chevron be included in the record. The Board objected to filing this information as part of the record. On 9 June 2000, the Court heard an interlocutory motion regarding the objection of the Board. On 16 June 2000, the Court ordered that the information in possession of the Board be filed as part of the record unless Chevron was able to secure a confidentiality order pursuant to the Federal Court Rules. A confidentiality order was issued by the Court on 18 October 2000 setting out specific direction to the parties.

Decision: As of 31 December 2000 this matter had yet to be set down for hearing.

5. Alberta Department of Energy (ADOE) - Northstar Energy Corporation (NEC)

Federal Court of Appeal

An Application for Leave to Appeal dated 25 May 1998 was filed by the ADOE. The Application challenged a ruling of the Board dated 24 April 1998, in which it dismissed a motion by the ADOE challenging the Board's jurisdiction to hear an application by NEC to construct a pipeline. The challenge was based on the grounds that the NEC application involved a local work and undertaking, rather than an extra-provincial work and undertaking. The ADOE had also applied to the Board for a Stay of Execution of the Board's GH-1-98 decision. On 4 June 1998, the Board denied the application for a Stay of Execution. Subsequent to the Board's dismissal of the stay application, the ADOE filed with the Federal Court of Appeal an application for leave to appeal the Board's decision dated 24 April 1998.

On 22 September 1998, the Federal Court of Appeal granted the leave to appeal and stayed the Board's GH-1-98 decision. The two applications were consolidated by Court Order on 22 September 1998. On 20 November 1998, two Notices of Appeal were filed by the ADOE, one appealing the ruling and the other appealing the Board's decision. These appeals were consolidated.

Decision: On 31 January 2000, the Court rescinded the Order to stay the proceedings. In February 2000 the ADOE filed a Notice of Discontinuance.

6. Maritimes and Northeast Pipeline Management Ltd. and Maritimes and Northeast Pipeline Partnership v. Union of Nova Scotia Indians, Confederacy of Mainland Micmacs and the Assembly of Nova Scotia Mi'kmaq Chiefs (UNS)

Supreme Court of Canada

An interlocutory decision of the Federal Court of Appeal was rendered 22 February 1999 holding that the UNS was precluded from applying for leave to appeal under the *National Energy Board Act* as it was not a party to the original proceeding before the Board and as such lacked standing. Leave to appeal to the Supreme Court of Canada was filed in April of 1999.

Decision: The application was dismissed by the Court on 17 February 2000.

7. **Rocky Mountain Ecosystem Coalition (RMEC) v. The National Energy Board and the Attorney General of Canada representing the Minister of Agriculture, the Minister of Fisheries and Oceans, the Minister of Natural Resources and the Minister of the Environment; Alliance Pipeline Ltd.**

Federal Court Trial Division

The National Energy Board was served with two applications for judicial review on 11 January 1999 in respect of the Alliance Pipeline Project. Judicial review against the departmental responsible authorities was struck out on 3 August 1999.

Decision: On 7 January 2000, the Federal Court Trial Division issued a Direction that the judicial review application was deemed to be struck out following the abandonment of the motion by the RMEC.

8. **Geophysical Services Incorporated v. The Chairman, National Energy Board and Information Commissioner of Canada**

Federal Court Trial Division

In November of 2000, the Board was served with a judicial review application in respect of a denial pursuant to an Access to Information request. The judicial review application states that the Board erred in concluding that the disclosure of the information requested could reasonably be expected to result in material financial loss, or prejudice the competitive position of a third party.

Decision: As of 31 December 2000 this matter had yet to be set down for hearing.

9. **Paul Vincent Dyke - Alliance Detailed Route Hearing Decision**

Review by NEB

On 23 March 2000, the Board dismissed an application dated 29 January 2000 from Mr. Paul Vincent Dyke to review the Board's detailed route hearing decision with respect to the Alliance Pipeline Project. The Board concluded that there had been no evidence presented which raised a doubt as to the correctness of the decision in the detailed route hearing.

10. Androscoggin Energy LLC (Androscoggin) - Replacement Gas Purchase Agreement and Amendment to Natural Gas Export Licence GL-283

Review by NEB

On 29 September 1999, Androscoggin applied for approval of a replacement gas purchase agreement and to amend natural gas export Licence GL-283. On 20 October 1999 the Board requested additional information from Androscoggin including Duke Energy Marketing Limited Partnership's (DEMLP) gas supply information. The supply information was not provided in Androscoggin's and DEMLP's final responses of 27 January 2000 and 25 January 2000 respectively. On 23 February 2000, Androscoggin requested that the Board stay the implementation of its decision and provide it with an opportunity to meet the Board's gas supply requirements regarding the new source of supply from DEMLP, such that no amendments to Licence GL-283 would be required by the Board.

On 6 March 2000, the Board stayed the implementation of its decision pending Androscoggin's filing of new information. On 13 March 2000, Androscoggin filed an application for review of the Board's decision dated 10 February 2000, denying an application for approval of a replacement gas purchase agreement and to amend natural gas export Licence GL-283.

On 20 April 2000, the Board decided to review its decision of 10 February 2000. After considering the supply information filed by Androscoggin, the Board decided to approve the replacement contract with DEMLP and to approve the amendment to Licence GL-283.

Supplement V

COOPERATION WITH OTHER ORGANIZATIONS

The National Energy Board cooperates with other agencies, to reduce regulatory overlap and provide more efficient regulatory services.

Natural Resources Canada (NRCan)

In 1996, the NEB signed a Memorandum of Understanding (MOU) with NRCan to reduce duplication and increase cooperation between the agencies. This MOU covers items such as data collection, the enhancement of energy models and special studies. The MOU was renewed in January 2000.

Canadian Environmental Assessment Agency (CEAA)

The NEB has been an active participant in CEAA's five-year program review. In addition, the NEB has worked with CEAA over the past year as part of a federal northern task force and has formed a joint NEB-CEAA panel for the review of a pending regulatory application.

Northern Pipeline Agency (NPA)

The NEB provides technical and administrative assistance to the NPA, which, under the Northern Pipeline Act, has primary responsibility for overseeing the planning and construction of the Canadian portion of the proposed Alaska Natural Gas Transportation System by Foothills Pipe Lines Ltd. Mr. Kenneth W. Vollman, Chairman, serves as Administrator and Designated Officer of the NPA.

Transportation Safety Board of Canada (TSB)

While the NEB has exclusive responsibility for regulating the safety of oil and gas pipelines under federal jurisdiction, it shares the responsibility for investigating pipeline incidents with the TSB. The roles and responsibilities of each body with regard to pipeline accident investigations are outlined in a MOU between the two boards.

Human Resources Development Canada (HRDC)

The NEB has an MOU with HRDC to administer the Canada Labour Code for NEB-regulated facilities and activities and to coordinate these safety responsibilities under the COGO Act and the NEB Act.

Yukon Territory Department of Economic Development (DED)

The NEB continues to work with Yukon officials to facilitate the transfer of oil and gas regulatory responsibilities in accordance with the Yukon Accord Implementation Agreement. The Board provides expert technical advice to the DED.

Mackenzie Valley Environmental Impact Review Board (MVEIRB)

In late 2000, the NEB and the MVEIRB signed a MOU to establish a cooperative framework for environmental impact assessment in the Mackenzie Valley. NEB staff are actively engaged with other federal departments and regulators in both the Northwest Territories and Yukon in defining future regulatory needs and processes.

Alberta Energy and Utilities Board (EUB)

The NEB has an MOU with the EUB on Pipeline Incident Response. The agreement provides for mutual assistance and a faster and more effective response by both boards to pipeline incidents in Alberta.

The NEB and the EUB maintained their commitment to using the common reserves database for oil and gas reserves in Alberta. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for cooperation.

Canada-Newfoundland Offshore Petroleum Board (CNOPB) and Canada-Nova Scotia Offshore Petroleum Board (CNSOPB)

The Chairs of the NEB, the CNOPB and the CNSOPB, together with executives from the Newfoundland and Nova Scotia Departments of Energy and NRCan, form the Oil and Gas Administrators Advisory Council (OGAAC). The OGAAC membership discuss and decide on horizontal issues affecting their respective organizations to ensure convergence and collaboration on oil and gas exploration and production issues across Canada. The NEB, CNOPB, and CNSOPB staff also work together to review, update and amend regulations and guidelines affecting oil and gas activities on Accord Lands.

The NEB's staff also provides technical expertise to NRCan, CNOPB, and CNSOPB on technical matters of mutual interest, such as reservoir assessment, occupational safety and health, diving, drilling and production activities.

Ontario Energy Board (OEB)

The NEB is continuing joint development of its Electronic Regulatory Filing initiative with the OEB and key participants from the regulatory community. This joint development will ensure that regulatory participants who deal with both boards will see a consistent approach in the electronic filing and retrieval of regulatory documents.

Saskatchewan Department of Energy and Mines (SEM)

The NEB and the SEM have worked together on some resource issues, but a formal agreement has not been signed.

British Columbia Ministry of Energy and Mines (MEM)

The NEB and MEM maintained their commitment to using a common reserves database for oil and gas reserves in British Columbia. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for cooperation.

Canadian Association of Members of Public Utility Tribunals (CAMPUT)

During 2000, Board members and staff played a leading role in organizing and speaking at CAMPUT conferences, including the May 2000 International Forum on Energy Regulation. Members and staff also sat on the executive committee of the Association, promoting the education and training of members and staff of public utility tribunals.

National Association of Regulatory Utility Commissioners (NARUC)

Board members regularly participate in meetings of the U.S. NARUC, particularly with respect to developments in U.S. gas markets that may affect cross-border trade in natural gas.

Supplement VI

LIST OF APPENDICES

The following Statistical Reports are published separately as Appendices to the Annual Report. Electronic copies can be found on the Board's Web site and printed versions are available from the Publications Office call (403) 299-3562 or 1-800-899-1265, send a facsimile to (403) 292-5503 or visit the Board's Web site (www.neb.gc.ca).

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NEB ORGANIZATION



SENIOR BOARD STAFF

Gaétan Caron	Chief Operating Officer
Judith Hanebury	General Counsel
Brenda Kenny	Business Leader, Applications
Terrance Rochefort	Business Leader, Commodities
John McCarthy	Business Leader, Operations
Byron Goodall	Business Leader, Information Management
Valerie Katarey	Business Leader, Corporate Services
Michel Mantha	Secretary of the Board
Glenn Booth	Professional Leader, Economics
Bonnie Gray	Professional Leader, Environment
Frank Gareau	Professional Leader, Engineering

BUSINESS UNIT RESPONSIBILITIES

The Board is structured into five business units, reflecting major areas of activity: Applications, Operations, Commodities, Information Management and Corporate Services. Three other units, Legal Services, Professional Leadership and Regulatory Services provide specialized services to the five business units.

UNIT DESCRIPTIONS

Applications

The Applications Business Unit is responsible for processing and assessing regulatory applications submitted under the NEB Act.

These fall primarily under Parts III, IV and VI of the Act, corresponding to facilities, tolls and tariffs and export applications. The Applications Unit is also responsible for the financial surveillance and audits of NEB-regulated pipelines.

Commodities

The Commodities Business Unit is responsible for energy industry and marketplace surveillance, including the outlook for the demand and supply of energy commodities in Canada and updating of guidelines and regulations relating to energy exports as prescribed by Part VI of the NEB Act. It is also responsible for processing applications for short-term exports of gas, oil and natural gas liquids, imports of natural gas, electricity exports and the construction of international power lines.

Operations

The Operations Business Unit is accountable for safety and environmental matters pertaining to facilities under the NEB Act, the COGO Act and the CPR Act. It conducts safety and environmental inspections and audits, investigates accidents, monitors emergency response procedures, regulates the development of hydrocarbon resources in non-accord frontier lands, and develops regulations and guidelines with respect to the above.

Corporate Services

The Corporate Services Business Unit is responsible for providing those services necessary to assist the Board in its management of human, material and financial resources.

Information Management

The Information Management Business Unit is responsible for developing and implementing an information management strategy for the Board and disseminating the information required by external stakeholders.

Legal Services

The Legal Services Team provides legal advice for both regulatory and management purposes. General Counsel is accountable for this Team.

Professional Leadership Team

The Professional Leadership Team has the responsibility for maintaining and enhancing technical expertise within the Board in the economic, environment, and engineering fields. Each of the three leaders is accountable for his or her respective professional field.

Regulatory Services

The Regulatory Services Team provides high-level administrative and regulatory support. The Secretary of the Board is accountable for this Team.

METRIC CONVERSION TABLE

The Board uses the International System of Units. The energy content of a 30-litre tank of gasoline is approximately one gigajoule. A petajoule is one million gigajoules. On average, Canada consumes about one petajoule of energy for all uses (heat, light and transportation) every 50 minutes.

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

Approximate Conversion Factor

metre	=	3.28 feet
kilometre	=	0.62 mile
hectare	=	2.47 acres
cubic metre of oil	=	6.3 barrels
cubic metre of natural gas	=	35.3 cubic feet
gigajoule	=	0.95 thousand cubic feet of natural gas at 1 000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
gigajoule	=	10^9 joules
petajoule	=	10^{15} joules
gigawatt hour	=	10^3 kilowatt hours
terawatt hour	=	10^6 kilowatt hours



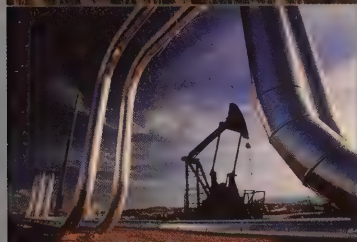
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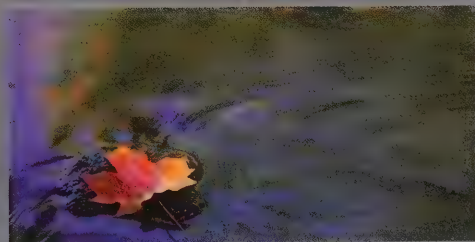
National Energy
Board



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de l'énergie



Annual Report 2001 to Parliament



NATIONAL ENERGY BOARD

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15 March 2002

The Honourable Herb Dhaliwal, P.C., M.P.
Minister of Natural Resources Canada
580 Booth Street, 21st Floor
Ottawa, Ontario
K1A 0E4

Dear Minister:

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 2001, in accordance with the provisions of Section 133 of the *National Energy Board Act*, R.S.C. 1985, c. N-7.

Yours truly,



Kenneth W. Vollman
Chairman



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OUR GOALS:

NEB-regulated facilities are safe and perceived to be safe.

NEB-regulated facilities are built and operated in a manner that protects the environment and respects individuals' rights.

Canadians derive the benefits of economic efficiency.

The NEB meets the evolving needs of the public to engage in NEB matters.

CHAIRMAN'S LETTER

The year 2001 tested the ability of energy markets to adjust to unprecedented volatility. The year began with record high natural gas prices throughout North America, a crisis situation in the California electricity market, and the highest oil prices since the 1991 Gulf war. By spring, however, both natural gas and oil prices were falling and by summer prices had returned to more normal levels. At the same time, the California situation eased as electric power consumption declined and supply increased. The year demonstrated the resiliency of energy markets to adjust to severe price swings.

One of the National Energy Board's main responsibilities to Canadians is to foster an efficient pipeline network delivering hydrocarbon fuels to energy users. I am pleased to report that the Canadian pipeline infrastructure responded extremely well to the market demands of 2001, reliably delivering about \$85 billion of natural gas, crude oil and petroleum products.

When assessing applications for new facilities, the Board ensures that a proper balance between economic, environmental and societal issues is achieved. The Board also realizes that companies planning large investments need clear regulatory requirements and dependable timelines. The Board worked throughout the year with other boards and agencies to develop a cooperation plan for a coordinated review of potential applications to construct a northern natural gas pipeline.

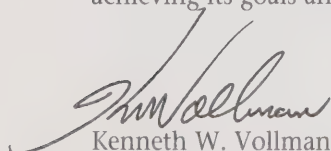
The Board is also responsible for promoting the safe construction and operation of federally regulated pipelines. Pipelines continue to be one of the safest modes of transport and most Canadians go about their daily business unaware of the smooth working of the more than 40 000 kilometres of pipeline under the Board's jurisdiction. In 2001, there were two major ruptures on these pipelines, neither of which resulted in injury to a member of the Canadian public.

Public concern about pipeline safety has risen since the events of 11 September 2001. The Board began work with the industry and other government agencies on ways of enhancing the security of the Canadian pipeline network. Changes have also been proposed to the *National Energy Board Act* that will support the Board in promoting a secure energy infrastructure.

The Board is also concerned that pipelines are operated in a manner that protects the environment. The Board has been moving towards goal-oriented regulation with a view to improving industry's ownership of environmental performance. As part of this strategy, in 2001 the Board began comprehensive audits of the environmental programs of regulated companies. I believe that pipeline companies are appropriately taking increased ownership for environmental responsibility. There were no incidents last year that resulted in severe degradation of environments in which Canadian pipelines operate.

The Board continues to engage Canadians who have an interest in the Board's activities. The Board held a number of meetings and hearings in local communities and travelled to parts of the country that have less direct access to the Board, including Atlantic Canada. We will continue to build our internal capacity to consult with Canadians, to understand their needs and to remove unnecessary barriers to public participation in Board processes.

I believe that the results shown in this report demonstrate the NEB's solid progress toward achieving its goals and fulfilling its mandate to act in the public interest of all Canadians.



Kenneth W. Vollman

OPERATING CONTEXT

The National Energy Board (NEB or Board) is responsible for assessing energy projects under its jurisdiction to ensure that projects proceed in a manner that is consistent with the public interest. The Board strives to protect the environment, maximize economic benefits to Canadians, ensure public safety, and respect the rights of landowners. However, the way in which the public interest is manifested continually changes as societal preferences change and

knowledge about energy development grows. The Board remains aware of the environment in which it operates and is ready to adjust its regulatory approaches to reflect the needs of Canadians.

The market context for each of the three major energy commodities is unique. Oil is traded on an open world market in which Canadian production and consumption represents a very small portion of the total market. As such, prices paid by Canadian consumers and prices paid to producers closely track world oil market trends.

Natural gas is traded primarily in a North American context in which the Canadian market is intimately connected to the U.S. market. Canada exports about 57 percent of its natural gas production, and these exports make up an important component of U.S. gas supply. Developments in any one geographic area in this integrated market inevitably affect the entire North American market. Although there is some

connection to offshore natural gas markets through trade in liquefied natural gas, the development of an international market is still in the seminal stage.

Finally, electric power markets still tend to be somewhat regional, although the degree of interconnection is increasing.

While the market context for each of the above three commodities is unique, there has been a strong trend towards convergence in recent years. This report is written having regard to the context for each of these energy commodities.

Volatile Energy Prices

The year 2001 was marked by remarkable volatility in energy prices, particularly for natural gas and electricity. Natural gas prices throughout North America hit record highs of more than US\$10 per Mcf¹ in January, prompting many industry analysts to state that prices would never again be at the US\$2 per Mcf level. However, gas prices fell steeply in the spring and by early fall had dropped below US\$2 per Mcf. Similarly, electricity prices hit record highs in many jurisdictions early in the year, most notably in California, only to fall in the spring and summer. World oil prices also began the year on a strong note, but weakened by mid-year and fell below US\$20 per barrel by year-end.

¹ Monies are in Canadian dollars unless otherwise indicated.

The extreme volatility of natural gas prices created an environment of uncertainty, which made planning more difficult for both consumers and producers. For instance, consumers with the ability to switch fuels and potential new consumers (those traditionally served by other fuels) were reluctant to switch to natural gas. Producers set their exploration and development budgets more cautiously. As well, the uncertainty around natural gas prices may have affected planning for the development of northern natural gas supplies.

Although price volatility causes uncertainty, the events of the last year clearly demonstrated that market adjustment mechanisms are strong and healthy in the North American energy sector. In response to the high natural gas prices of last winter, there was substantial switching to fuel oil in the industrial sector. At the same time, ammonia producers shut down production while the petrochemical industry did some switching to other feedstocks. Many electricity users in areas hit by high prices found ways of reducing consumption.

While plant shutdowns may appear to be a severe response to high natural gas prices, they are a natural market reaction. The high prices ensured that available gas supplies were allocated to the end uses which valued them most, while lower value end uses were squeezed out of the market. At the same time, producers responded to the price signals by undertaking record drilling efforts, which resulted in an increase in production. These market adjustments caused natural gas prices to fall to lower levels, although the steepness of the fall was strongly influenced by the slowing economy and milder weather.

It must be noted that governments throughout North America largely declined to intervene in a major way in response to these developments in energy markets and preferred to trust in market mechanisms to make adjustments to the high price environment.

Pipeline Industry Restructuring

There have been some fundamental changes in the structure of the Canadian natural gas pipeline industry. Last year marked the first full year of operation of the Alliance Pipeline Ltd. (Alliance) system and the Vector Pipeline Ltd. (Vector) system. Together they provide an alternative to TransCanada PipeLines Limited's (TransCanada's) system to deliver western Canadian natural gas to central Canadian markets. The Maritimes and Northeast Pipeline Management Ltd. (M&NP) system is in full operation on the East Coast, and 2001 saw the first deliveries of Sable gas to residential and commercial users in New Brunswick. In southern British Columbia, BC Gas Utility Ltd. (BC Gas) has been operating the Southern Crossing Pipeline, which provides an alternative to the Westcoast Energy Inc. (Westcoast) system for delivering Alberta-produced gas to the lower mainland area.

The development of these new pipelines has created greater competition between pipeline systems. At the same time, there has been considerable consolidation in the industry. For example, TransCanada acquired the NOVA Gas Transmission Ltd. (NOVA) system in Alberta in 1998, and Duke Energy Ltd. purchased Westcoast in the fall of 2001. This created a situation that increased competition in many areas of the country, while still leaving considerable market power with the major transporters.

These changes in industry structure were reflected in the number of hearings before the Board on toll and tariff matters. After several years during which most tolling matters were settled between shippers and pipeline companies, a number of issues have recently been brought before the Board for resolution. The Board recognizes that it will be difficult for pipeline companies and shippers to reach unanimous agreement on all matters among themselves in the new competitive environment. Accordingly, the Board is exploring alternatives to traditional public hearings to assist parties in arriving at outcomes in the public interest.

Societal Context

The Board makes decisions on energy projects that directly affect the industry. These decisions also affect energy consumers, landowners along pipeline rights of way, and anyone who lives in the vicinity of a pipeline. In addition, the Board's decisions affect the degree of environmental protection that companies build into their construction projects. In short, Board decisions are taken within a broader public interest context.

The Board is usually only one of many public agencies that have a responsibility to review energy projects and ensure that they proceed in a fashion that is consistent with the public interest. Pipeline projects typically pass through many jurisdictions, each of which will have some interest in ensuring that the project is pursued in an acceptable manner.

The NEB is committed to engaging the various stakeholder groups and to working in a collaborative manner with other regulatory agencies to ensure that energy projects only proceed once all the relevant public interests are considered. In 2001, the Board invested considerable effort into working with other regulatory authorities to define the regulatory process for anticipated applications for a major natural gas pipeline from the North. The Board, in co-operation with the Canadian Environmental Assessment Agency (CEAA), also laid the groundwork for reviewing an application for a new pipeline to cross the Georgia Strait from the state of Washington to Vancouver Island.

Pipeline Security

The events of September 11 heightened awareness of the need to ensure the security of Canada's natural gas and oil pipeline infrastructure. The Board engaged in discussions with pipeline companies about security measures. Most pipelines have been very pro-active in addressing the issue and have, among other things, increased patrols, hired extra guards and tightened security around key installations. Many companies commissioned third party audits of their security systems to identify measures that could be taken to enhance security.

The Board has also been in close contact with the Government of Canada's Office of Critical Infrastructure Protection and Emergency Preparedness to identify facilities that are critical to the successful operation of the nation's pipeline network. The Board has also had meetings with its U.S. counterparts about various approaches to ensuring the integrity of the pipeline grid. The Board is satisfied that Canadian pipeline companies are taking prudent measures to protect the overall security of the pipeline network in Canada.

REGULATORY HIGHLIGHTS

During 2001, the Board dealt with applications for new pipeline facilities, new international power lines, tolls and tariff filings, and approvals for exploration and development activity north of the 60th parallel.

The majority of applications processed by the Board were for routine improvements to the operation of existing regulated facilities, short-term export orders, and approvals related to exploration and production activity in frontier areas. The Board also investigated complaints from landowners who had concerns regarding construction and reclamation on their lands by regulated companies. In 2001, the Board received more than 550 applications from regulated companies and 43 complaints from landowners under the *National Energy Board Act* (NEB Act), as well as 63 applications under the *Canada Oil and Gas Operations Act* (COGO Act).

Approvals granted pursuant to the NEB Act include:

- 1 Certificate of Public Convenience and Necessity
- 91 orders and permits pertaining to the construction and operation of pipelines and power lines under Part III of the NEB Act
- 11 orders pertaining to traffic tolls and tariffs under Part IV of the NEB Act
- 335 permits and orders to export gas, crude oil and electricity under Part VI of the NEB Act

A complete list of regulatory decisions issued in 2001 is provided in Appendices B, C and E.

Pipeline Facilities

After a couple of years of considerable expansion in natural gas pipeline infrastructure (Alliance, Vector, M&NP, and BC Gas's Southern Crossing project), only two relatively small gas pipeline applications required hearings during 2001. Parties continue to seek competitive options to increase their flexibility. This led to an application by Petro-Canada to bypass NOVA in Southeast Alberta. In addition, Cartier Pipeline and Company, Limited Partnership (Cartier) sought clarification of a provision in M&NP's tariff in order to facilitate Cartier's pursuit of a link between M&NP's pipeline system and the province of Quebec. The Board also received an application by Georgia Strait Crossing Pipeline Limited (GSX) to link Washington state to Vancouver Island to supply natural gas for power generation.

In February 2001, the Board approved an application from Murphy Oil Company Ltd. to construct 17.2 km of 323.8 mm¹ pipeline from the Chinchaga area of British Columbia to a compressor station in Manning, Alberta. The pipeline will allow natural gas production from major new gas finds in the area to be transported to market.

In December 2001, the Board approved an application allowing Petro-Canada to construct 71 km of mostly 273.1 mm natural gas pipeline from its existing natural gas production properties located in the Medicine Hat area to TransCanada's system near Burstall, Saskatchewan.

1 The Board uses the International System of Units. A metric conversion table with approximate conversion factors is provided on the inside back cover of this report.

The GSX application, filed in April 2001, is scheduled to be heard in 2002. The proponents of the Canadian portion of the Millennium Pipeline Project (referred to in last year's Annual Report) withdrew their applications in 2001. They indicated that the withdrawal was due to unexpected delays in the issuance of regulatory approvals for the U.S. Millennium Pipeline Project, uncertainties with marketing and commercial activities and the need to amend significant portions of the existing applications to reflect changes to the project since the original filings.

In May 2001, the Board approved an application by Enbridge Pipelines Inc. (Enbridge) to construct 123 km of 914 mm oil pipeline over three separate segments located between its terminals in Hardisty, Alberta and Kerrobert, Saskatchewan. This represents the second phase of a multi-phase Terrace Expansion Program agreed upon by industry and Enbridge in 1998. An important aspect of the Terrace Phase II proceeding was Aboriginal participation, and in its decision the Board encouraged the development of meaningful partnerships between Board-regulated companies and Aboriginal people who may be affected by pipeline projects.



Tolls/Tariffs Matters

After several years during which there were no major toll hearings, tolling issues resurfaced in 2001. During 2001, the Board held four hearings related to tolls/tariffs matters - two related to the filing of tolls for Group I companies, one

in response to a request for a review and variance of tolls, and one in response to a complaint from shippers. The Board also approved a toll application on the Trans Québec & Maritimes Pipeline Inc. system following a written comment period.

The Board approved TransCanada's applied-for tolls but ruled that some sharing of risk may be appropriate on a prospective basis. The Board indicated that this issue should be dealt with as part of a comprehensive review of TransCanada's tolling methodology and tariff conditions, and directed TransCanada to file a comprehensive tolls and tariffs application by 1 September 2002.

After approving a negotiated tolls settlement for 2001 and 2002 between M&NP and its stakeholders, the Board heard evidence on the proper application and interpretation of M&NP's Lateral Policy. The Board found that a hypothetical 260 km pipeline extending from M&NP's mainline near Fredericton to the New Brunswick/Quebec border would be considered a mainline extension, not a lateral, and that such a pipeline proposal would fall outside of the ambit of the Lateral Policy. Further proceedings will be necessary to establish the tolling methodology and economic feasibility of these facilities.

In the BC Gas review hearing, the Board determined that the toll for service on Westcoast's pipeline system from Kingsvale to Huntingdon, British Columbia should be reduced from the toll established in a hearing held in 1998, but only after the Westcoast system is expanded from Kingsvale south. Until that expansion takes place, the existing toll will remain in effect.

In August 2001, the Board released its decision concerning tolls charged on the Milk River Pipeline. New tolls were established based upon an approved cost of service and revised toll design, following a complaint by a group of producers and shippers. This was the first time since financial regulation of small pipelines on a complaint basis began in 1985 that the Board set tolls for a Group 2¹ pipeline company.

1 Group 1 gas and oil pipelines are the major pipeline companies that are subject to active regulatory oversight by the NEB. Group 2 consists of all other pipeline companies under the NEB's jurisdiction.

Power Line Facilities

As a result of the increase in electricity prices in late 2000 and early 2001 and the introduction of competitive wholesale power markets in the United States, there has been growing interest in strengthening links in the North American electric power grid. During 2001, the Board received three applications for new international power lines (IPLs) and began proceedings on the Sumas Energy 2 Inc. (Sumas) IPL. This contrasts sharply with the previous five years, during which time the Board received only two applications for the construction of IPLs. In February 2001, after learning that the related Sumas application to build a gas-fired electric generation facility in Washington state would be denied, the Board ordered that its proceedings be indefinitely adjourned until further notice¹.

Applications for IPLs from New Brunswick Power Corporation (NB Power), Cedars Rapids Transmission Co. and Manitoba Hydro-Electric Board (Manitoba Hydro) are currently in various stages of review by the Board.

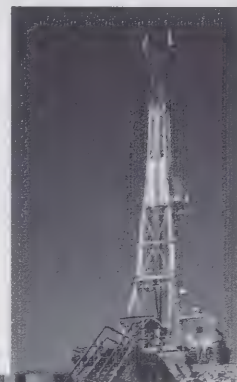
Activity in Frontier Regions

The Board was particularly active in 2001 assessing new facility applications for frontier resources. Producer groups announced that they were continuing to conduct feasibility studies on a major natural gas pipeline from the Mackenzie Delta, while owners of natural gas on the North Slope of Alaska had announced that they were studying the feasibility of bringing gas to southern markets. To date, no applications for pipeline construction have been made. Despite the volatility in gas markets, many industry analysts believe it will still be necessary to develop frontier resources.

Exploration activity in the Mackenzie Delta/Beaufort Sea and the Central Mackenzie areas remained active. Extensive geophysical programs were conducted in 2000 and again in 2001, and exploration well drilling is on the increase. Activity in the Central Mackenzie area remained steady with the continuation of both geophysical programs and exploration well drilling.

Exploration and production activities also occurred in 2001 in the southern Northwest Territories near the hamlet of Fort Liard. Maintaining active programs is feasible now that most of these projects are within economic reach of an existing pipeline system that serves North American markets.

British Columbia continues to have an interest in developing potential energy resources off its west coast and has appointed a scientific panel to ascertain whether these resources can, in fact, be extracted in a way that is scientifically sound and environmentally responsible. A moratorium on exploration off the west coast has been in effect since 1972.



¹ As of December 2001, the Washington State Energy Facility Site Evaluation Council was considering a revised application by Sumas. It is, accordingly, possible that a Sumas application will be submitted to the NEB in the future.

Regulatory Co-operation in the North

On 2 March 2001, the chairs of boards and agencies with regulatory and environmental assessment responsibilities in the Mackenzie Valley (12 organizations in total including the NEB) jointly released a document entitled *Guidance on Provision of a Preliminary Information Package for*

Gas Development in the NWT. A Preliminary Information Package provided by a proponent will enable the boards and agencies to conduct an evaluation of potential approaches for a co-ordinated review process in a timely manner.

By year-end, these chairs had completed a draft co-operation plan for the co-ordinated review of any proposal for the construction of a northern gas pipeline through the Northwest Territories. The elements of the co-operation plan include:

- a common set of information requirements for both the environmental and regulatory components of the process
- development of appropriate rules of procedure suitable to all boards and agencies
- agreement on sharing of resources including staff, technical and logistical support
- clear linkages between the environmental assessment and regulatory components of the process
- development of a common public registry which will ensure enhanced public access

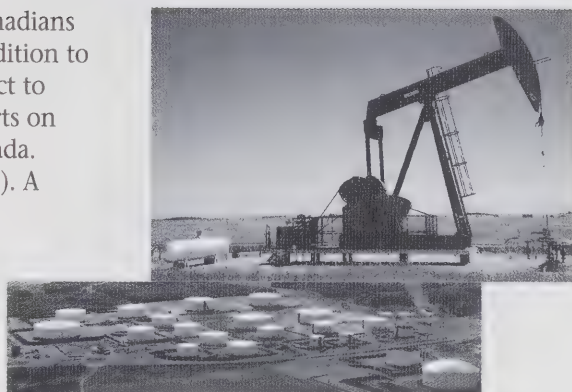
This blueprint for co-operation will enhance the effectiveness, transparency, and timeliness of the environmental assessment and regulatory decision-making. The draft co-operation plan will be released for public comment prior to its finalization.

The NEB continued to participate in the development of guides to the regulatory processes for oil and gas activities related to exploration, development and production through the Regulatory Road Maps Project. Three guides were released in 2001: *Oil and Gas Approvals in the Northwest Territories - Inuvialuit Settlement Region*, *Offshore Oil and Gas Approvals in Atlantic Canada - Newfoundland Offshore Area* and *Offshore Oil and Gas Approvals in Atlantic Canada - Nova Scotia Offshore Area*. Two additional guides are being prepared for specific areas of the Northwest Territories. The Atlantic Canada Petroleum Institute, the Canadian Association of Petroleum Producers (CAPP), Natural Resources Canada and Memorial University of Newfoundland jointly sponsored the offshore guides for Atlantic Canada. CAPP and Indian and Northern Affairs Canada are sponsoring the Northwest Territories guides. These guides can be found electronically at www.oilandgasguides.com.

ENERGY OVERVIEW

As part of its monitoring function, the NEB informs Canadians about energy market trends on an ongoing basis. In addition to fulfilling its statutory reporting requirements with respect to energy exports and imports, the NEB also prepares reports on current and future energy market developments in Canada. These reports are called *Energy Market Assessments* (EMAs). A summary of the EMAs published in 2001 is provided in the Economic Efficiency section of this report.

This overview provides a summary of Canadian energy supply, consumption, production, prices and trade over the last five years, with an emphasis on developments in 2001¹. Appendices of statistical information have been prepared as a companion document to the Annual Report. The appendices include details on the supply and disposition of crude oil, natural gas and electricity, industry activity, facility certificates, orders and licences for exports, and pipeline financial information (see List of Appendices in Supplement VI).



Energy and the Canadian Economy

In 2001, the energy industry accounted for just over 6 percent of Canada's Gross Domestic Product (GDP) and employed approximately 293,000 people. Energy export revenues accounted for 12 percent of all Canadian exports, up from 11 percent in the previous year. This increase was due to higher commodity prices for crude oil, natural gas, and electricity, particularly in the first half of the year.

Canadian energy production expanded by about 1 percent in 2001, after a 2.5 percent gain in 2000 (Table 1). Petroleum and natural gas together accounted for 75 percent of production. In recent years, higher levels of natural gas and petroleum production, including crude oil and natural gas liquids (NGLs), have been supported by a number of developments: sustained growth in the North American economy, higher oil and gas prices, pipeline expansions and technological improvements. Increasing use of natural gas to produce electricity, particularly in the United States has been another factor underpinning increased Canadian gas production. The rate of growth in energy production moderated as a result of the economic slowdown in Canada and

TABLE 1
Domestic Energy Production by Energy Source
(petajoules)

	1997	1998	1999	2000	2001 ^(a)
Petroleum	5 446	5 627	5 420	5 631	5 640
Natural Gas	5 953	6 125	6 189	6 403	6 531
Hydroelectricity	1 250	1 183	1 232	1 274	1 172
Nuclear	900	780	802	795	859
Coal	1 897	1 651	1 589	1 516	1 531
Renewable and Other	554	571	609	615	621
Total	16 000	15 937	15 841	16 234	16 354

(a) Estimates.

Sources: Statistics Canada, NEB

1 Where available, information has been provided using data for the year 2001. In some cases (for example, reserves), 2000 data is provided.

TABLE 2
Domestic Energy Consumption
(petajoules)

	1997	1998	1999	2000	2001 ^(a)
Space Heating	1 973	1 868	1 932	2 020	1 969
Transportation	2 183	2 257	2 313	2 348	2 388
Other Uses ^(b)	3 493	3 403	3 489	3 747	3 653
Non-Energy ^(c)	833	812	825	767	783
Electricity					
Generation ^(d)	2 142	2 185	2 181	2 185	2 241
Total	10 624	10 525	10 740	11 067	11 034

(a) Estimates.

(b) Includes energy used for space cooling and ventilation as well as a variety of uses in the industrial sector.

(c) Includes energy used for petrochemical feedstocks, asphalt, lubricants, etc.

(d) Includes producer consumption and losses as well as nuclear energy conversion requirements.

Sources: Statistics Canada, NEB

the United States in the second half of 2001.

Hydroelectric generation declined in 2001, while nuclear generation increased. Coal production was up one percent, but remained well below the most recent peak level in 1997, mainly due to declining exports. Renewables and other fuels, which consist mostly of wood, wood waste, and steam, continued to comprise about four percent of energy production.

During 1997-2001, total energy production increased on average by 0.5 percent per year, with larger increases in oil and gas partially offset by slower growth or declines in production from other energy sources.

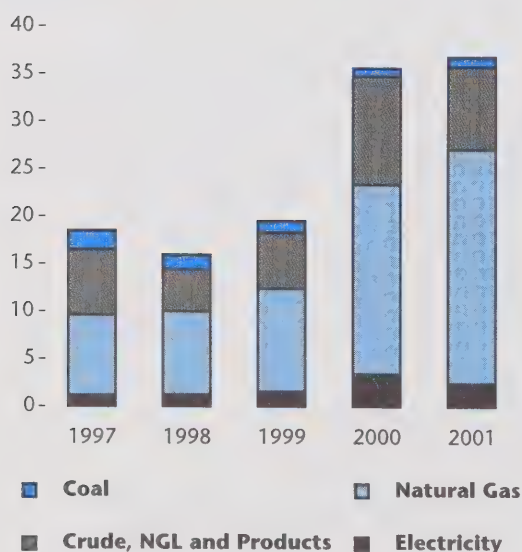
Preliminary estimates indicate that domestic energy demand remained relatively constant in 2001 after annual growth of two to three percent in 1999 and 2000 (Table 2). A number of factors combined to halt the growth in demand: a warmer than normal winter period, slowing economic growth and consumers' response to higher energy

prices, particularly oil and natural gas prices.

During 1997-2001, domestic energy consumption increased by four percent, an average of about one percent per year. Growth was strongest in transportation and industrial uses and weakest in space heating and other applications. However, demand increased at a slower pace than the economy during this period (3.3 percent per year as measured by GDP), indicating that the energy intensity of the economy (energy consumed per unit of GDP) continues to decline.

In 2001, total gross export earnings for natural gas, petroleum, electricity and coal were approximately \$58.0 billion, up from the previous record-high levels of \$54.5 billion in 2000 and \$30.4 billion in 1999. Canada's energy trade surplus also registered a third consecutive year of exceptional performance, increasing to a record \$36.7 billion (Figure 1). Natural gas accounted for 67 percent of the surplus (\$24.6 billion); crude oil, NGL and petroleum products accounted for 24 percent (\$8.7 billion); and electricity and coal accounted for 6 percent and 3 percent, respectively.

FIGURE 1
Net Energy Export Revenues
(billion \$)



Crude Oil and Natural Gas Liquids

International Markets

The high oil price environment that prevailed in 2000 continued into 2001. West Texas Intermediate (WTI) crude oil traded in the range of US\$26 to US\$30 per barrel until mid-year, after which declining demand related to weakening world

economies led to a moderation of prices. The post-September fall in petroleum demand further increased the downward pressure on prices, which averaged less than US\$21 per barrel for the remainder of the year. For the year as a whole, WTI averaged US\$26 per barrel compared with approximately US\$30 per barrel in 2000 (Figure 2).

Unlike 2000, when the Organization of Petroleum Exporting Countries (OPEC) increased production to satisfy growing worldwide demand for oil, 2001 was characterized by a slowing global economy and the incentive for the group to reduce output. In 2000, OPEC introduced a price band mechanism designed to support prices in the range of US\$22 to US\$28 per barrel, as represented by an OPEC "basket" of seven crude oils. Under this mechanism, if the OPEC basket remained above US\$28 per barrel for 20 consecutive days, output would be raised by 500 000 barrels (79 000 cubic metres) per day. If the basket fell below US\$22 per barrel for ten days, then production would be reduced by the same amount. To maintain prices in the desired range, OPEC reduced production quotas in February, April and September 2001, with total quota reductions equalling 3.7 million barrels (588 000 cubic metres) per day.

After 11 September, OPEC did not immediately adjust its production levels, preferring instead to wait and assess the impacts on the worldwide supply/demand balance. During this period, WTI dropped to a level of approximately US\$17 per barrel. At its meeting in mid-November 2001, OPEC decided that it would reduce its output by 1.5 million barrels (238 000 cubic metres) per day, effective 1 January 2002, but only if non-OPEC countries cut their production by 500 000 barrels (79 000 cubic metres) per day. By year-end, a group of non-OPEC countries including Russia, Norway, Mexico, Oman and Angola agreed to support OPEC, and WTI rose to about US\$20 per barrel.

Production and Reserves Replacement

Canadian production of crude oil and equivalent established a record in 2001, with production estimated at an average of nearly 350 000 cubic metres per day, up by two percent from year 2000 levels. This growth reflects increases in synthetic, bitumen and conventional heavy crude oil production from Western Canada and an increase in conventional light production from Eastern Canada (Table 3).

FIGURE 2
WTI and Brent Oil Price
(US\$ per barrel)



TABLE 3
Canadian Production of Crude Oil and Natural Gas Liquids
(thousand cubic metres per day)

	1997	1998	1999	2000	2001 ^(a)
Conventional Light (East)	2.7	13.5	17.5	23.6	24.3
Conventional Light (West)	132.4	126.9	113.1	108.3	104.7
Synthetic	45.5	48.2	51.5	50.1	54.4
Pentanes Plus	27.3	27.5	27.2	27.3	25.1
Total Light	207.9	216.1	209.3	209.3	208.5
Conventional Heavy	89.6	86.5	83.0	89.0	90.6
Bitumen	37.6	45.7	42.1	44.4	49.1
Total Heavy	127.2	132.2	125.1	133.4	139.7
Total Crude Oil and Equivalent	335.1	348.3	334.4	342.7	348.2
Natural Gas Liquids	93.5	96.3	101.2	99.8	92.2

(a) Estimates.

TABLE 4
Conventional Crude Oil Reserves,
Additions and Production – 1996-2000
(million cubic metres)

	1996	1997	1998	1999	2000	Total
Additions ^(a)	64	86	68	129	78	425
Production	81	81	87	78	79	406
Total Remaining						
Reserves	643	666	650	702	700	

(a) Hibernia production started in 1997; Terra Nova reserves added in 1999

TABLE 5
Estimates of Established Reserves of Crude Oil and
Bitumen at 31 December 2000
(million cubic metres)

Conventional Crude Oil	Initial	Remaining
British Columbia ^(a)	122.3	27.3
Alberta ^(b)	2 554.3	291.4
Saskatchewan ^(c)	754.0	182.0
Manitoba ^(d)	37.4	3.8
Ontario ^(e)	14.2	1.9
NWT and Yukon:		
Arctic Island and Eastern Arctic Offshore ^(f)	0.5	0.0
Mainland Territories - Norman Wells	37.5	6.8
Nova Scotia ^(g) - Cohasset and Panuke	7.0	0.0
Newfoundland ^(g) - Hibernia and		
Terra Nova	205.1	186.9
Total	3 732.3	700.1
Crude Bitumen		
Oil Sands - Upgraded Crude ^(b)	5 590.0	5 220.0
Oil Sands - Bitumen ^(b)	22 740.0	22 590.0
Total	28 330.0	27 810.0
Total Conventional and Bitumen	32 062.3	28 510.1

(a) British Columbia Ministry of Energy & Mines and NEB common database

(b) Alberta Energy & Utilities Board and NEB common database

(c) Provincial estimate for 31 December 2000

(d) Manitoba Energy and mines to 31 December 1999

(e) Canadian Association of Petroleum Producers

(f) Bent Horn abandoned 1996

(g) Offshore boards

Note: Totals may not add due to rounding

Production at Hibernia, offshore Newfoundland and Labrador, increased by two percent above year 2000 levels, contributing 24 100 cubic metres per day of conventional light crude oil to Canadian supply in 2001.

In Western Canada, crude oil and equivalent supply increased by about one percent in 2001. Conventional light crude oil production declined by about three percent, continuing a long-term trend reflecting the natural decline of the reservoirs. Conventional heavy crude oil production increased by two percent, consistent with a long-term upward trend.

The ongoing development of Canada's oil sands resources resulted in production increases for synthetic crude oil and in situ bitumen, with both up by about 11 percent over the previous year.

While remaining established reserves are reduced by production each year, new discoveries, extensions to existing pools and revisions to reserves estimates in existing pools add to reserves. From 1996 to 2000, on a cumulative basis, additions to established reserves of conventional light and heavy crude oil replaced 105 percent of production (Table 4). The year 2000 was the third year in the five years where production exceeded additions of conventional crude oil, reflecting the increasing maturity level for conventional oil in the Western Canada Sedimentary Basin (WCSB).

The NEB's estimate of remaining conventional crude oil and crude bitumen reserves at year-end 2000 (the last year for which data is available), is 28.5 billion cubic metres (Table 5). This represents a decline of less than one percent compared with the previous year, reflecting a slight decrease in remaining reserves for both conventional crude and bitumen. It is noteworthy that the remaining reserves of crude bitumen, at 27.8 billion cubic metres, are sufficient to support in situ bitumen and oil sands mining production at current levels for about 700 years.

Estimates of remaining conventional oil reserves in Canada were essentially unchanged at 700 million cubic metres in 2000, as reserves increases essentially equalled production.

Decreased reserves in Alberta, offshore Newfoundland and Labrador and in the Northwest Territories were offset by increased reserves, mainly in Saskatchewan. The Saskatchewan increase

can be attributed to the increased oil-related activity levels in 2000. There were no changes to the initial reserves of crude bitumen in 2000; thus remaining reserves decreased by an amount equivalent to bitumen production volumes.

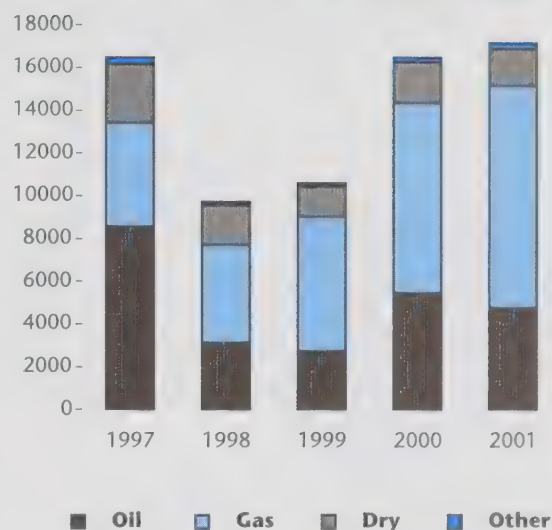
Upstream Activity

A record 17 983 total wells were drilled in year 2001, exceeding the previous high of 16 507 wells established in year 2000 (Figure 3). This record level of drilling activity was in response to the high natural gas and oil prices that prevailed in the early part of the year. The focus of the drilling was on natural gas, with the number of gas well completions up by 16 percent in 2001 from 2000, and making up 69 percent of all wells completed. Oil well completions for 2001 were 14 percent lower than the previous year, with oil drilling dropping off after the first quarter as oil prices decreased.

Competition for land remained high in 2001 as revenue from land sale bonuses collected by the four western Canadian provinces totalled more than \$1.6 billion or 10 percent higher than in 2000. While the average price, at \$292 per hectare, was down slightly from \$299 per hectare received in 2000, the total land area involved in sales was up 15 percent from 2000, to 5.5 million hectares. In the frontier areas, the majority of land sale activity was concentrated in the Nova Scotia offshore where there is keen interest surrounding the proposed natural gas development at Deep Panuke.

Seismic survey activity also remained strong in 2001, with the number of active crews up eight percent over the previous year. This increase reflects a greater level of activity in the first half of 2001, with second-half levels similar to those of 2000. Seismic activity in Western Canada was focused in the southeast, foothills, and northwest regions of Alberta as well as in the northeast region of British Columbia. Record expenditures of \$20 billion for exploration and development of Canadian conventional and frontier areas (excluding oil sands) were made in 2001, up 10 percent from the previous year. Exploration spending continues to be about one-third of the total oil and gas exploration and development expenditure in Canada.

FIGURE 3
Number of Wells Drilled



Crude Oil Exports and Imports

Total crude oil exports, including pentanes plus and upgraded bitumen (synthetic crude), are estimated at 218 100 cubic metres per day, a minimal decrease from year 2000. The 2001 total consisted of 35 percent light crude oil and equivalent and 65 percent blended heavy crude oil.

The estimated value of crude oil exports in 2001 was \$15.6 billion, compared with \$18.9 billion in 2000. While export volumes remained flat, revenues decreased due to lower crude oil prices. In 2001, the estimated average light and heavy crude oil export prices were \$39.09 and \$26.38 per barrel (\$246 and \$166 per cubic metre) respectively, compared with \$43.65 and \$34.15 per barrel (\$275 and \$215 per cubic metre) in 2000 (Figure 4).

Year	Light (Approx. Sales)	Heavy (Approx. Sales)
1997	150	120
1998	110	80
1999	180	120
2000	250	200
2001	280	220

In 2001, crude oil imports were 148 500 cubic metres per day and represented 53 percent of total refinery feedstock requirements in Canada. Crude oil requirements for the Atlantic region and Quebec were made up of imports with the exception of some volumes of east coast domestic production. Ontario refiners received about 44 percent of their feedstock requirements from foreign sources. This volume

remained unchanged from 2000 as Enbridge's crude oil pipeline from Montreal to Sarnia (Line 9) operated at near capacity. Other regions did not import crude oil during 2001.

Crude oil originating from the North Sea accounted for 57 percent of total imports, down 4 percent compared to year 2000. OPEC countries represented 33 percent of total imports, equalling year 2000 volumes, while imports from other sources accounted for 10 percent, up 4 percent from 2000.

Oil Refining and Gasoline Prices

Canadian refining capacity in 2001 was 322 000 cubic metres per day, with 71 percent of that capacity residing in Eastern Canada.

In 2001, the demand for petroleum products in Canada averaged 258 900 cubic metres per day, a slight decrease from 2000. Refinery production rose marginally to 315 600 cubic per day. Refinery receipts of domestic crude oil averaged 133 000 cubic metres per day, an increase of two percent from 2000.

Despite refiners operating at 90 percent capacity, product inventories, particularly motor gasoline, were lower in 2001. Gasoline prices generally reflect crude oil prices, but other market forces also influence prices, such as inventory levels at refineries and the supply/demand balance for specific refined products. Strong crude oil prices and demand combined with tight supply led to record high wholesale gasoline prices in the second quarter. By year-end 2001, softening Canadian demand and economic slowdown in the United States caused wholesale oil prices to drop to the lowest level in two years.



Main Petroleum Product Exports and Imports

Historically, Canada has been a net exporter of main petroleum products, such as motor gasoline and middle distillates. For 2001, exports of main petroleum products and partially processed oil are estimated at 50 230 cubic metres per day, an increase of 27 percent from 2000. This reflects a significant increase in shipments of motor gasoline and middle distillates as a result of a refinery expansion in Atlantic Canada.

The estimated revenue from main petroleum product exports, including partially processed oil, was \$4.3 billion in 2001 - a significant increase from \$3.2 billion in 2000. The increase in revenues is a result of strong prices, particularly for motor gasoline, during the first half of 2001. This revenue excludes product exports from crude oil processing agreements for which prices are not assigned.

Imports of main petroleum products in 2001 are estimated at 22 620 cubic metres per day, a 29 percent increase from 2000. Much of the increase in imports of petroleum products was in Atlantic Canada. High electricity prices in the U.S. Northeast resulted in increased demand for heavy fuel oil in New Brunswick to generate electricity. The combined volumes of heavy fuel oil and motor gasoline make up 75 percent of the total imports of main petroleum products.

The United States continued to be the largest buyer of petroleum products, accounting for almost 95 percent of total exports. The U.S. East Coast continued to be the largest market, followed by the Midwest. Exports were also made to Latin America and Europe.

Oil Pipeline Capacity

In 2001, Enbridge operated at approximately 77 percent of total capacity, with the actual throughput averaging 209 600 cubic metres per day. Average utilization in 2001 for Enbridge's

Line 9 was approximately 88 percent. By comparison, year 2000 utilization rates for Enbridge and Line 9 were 77 and 84 percent, respectively. In November and December 2001, Enbridge rationed heavy crude oil volumes, by a small amount, on its heavy crude oil pipeline (Line 4) due to Terrace Phase II construction as well as general system maintenance.

Other export pipelines increased throughputs in 2001 as volumes were backed out of Enbridge. The TMPL system operated at 85 percent of its light capacity during 2001 compared with 83 percent for 2000. Express Pipeline Ltd. increased throughput in 2001, operating at 90 percent of capacity compared with 78 percent in 2000.

Natural Gas Liquids

Natural gas liquids include ethane, propane, and butanes obtained by extraction from natural gas, as well as propane and butanes produced from the crude oil refining processes. Approximately 80 to 85 percent of propane supply and 55 to 60 percent of butanes supply comes from natural gas production, with the remainder from crude oil refinery processes.



The availability of NGLs from natural gas is determined by the volume of gas production, concentration of liquids in the gas stream, extraction plant capacity and efficiency, as well as the economics of extracting liquids. In the North American market, the relationships among the prices of natural gas, crude oil and electricity are critical to NGL production economics.

Production of NGLs from gas plants and refineries in 2001 is estimated at 92 200 cubic metres per day. Ethane production was 37 000 cubic metres per day, propane production was 29 500 cubic metres per day and the production of butanes was 25 700 cubic metres per day. Production of propane, butanes and ethane decreased by 15 percent, 4 percent and 3 percent, respectively, compared with 2000 levels. These reductions reflect producers' decisions to bypass extraction facilities, leaving propane and ethane in the gas stream (particularly during early 2001 when natural gas prices reached unprecedented highs).

Exports of NGLs during 2001 are estimated at 28 000 cubic metres per day, a 20 percent decrease from 2000. Ethane exports were negligible, decreasing from 2000 levels by 99 percent, mainly due to the increase in ethane requirements at the Joffre petrochemical facilities. Propane exports were 22 200 cubic metres per day and butanes exports were 5 800 cubic metres per day. Propane and butane exports decreased by 15 and 14 percent respectively, due primarily to the slowdown in the U.S. economy. The U.S. Midwest continued to be Canada's largest market for propane and butanes, accounting for 70 percent of the total export volume. Smaller amounts were delivered to the U.S. East Coast and West Coast.

The estimated value of exports of NGLs in 2001 is \$2.5 billion, down slightly from \$2.6 billion in 2000. Although export volumes decreased in 2001, relatively strong prices through to mid-summer contributed to export revenues. In general, domestic NGL prices tracked export prices, indicating that Canadian consumers were able to purchase products at fair market prices.

Natural Gas

Natural Gas Markets

The record high natural gas prices experienced in early 2001 continued to fuel a record pace for natural gas drilling by Canadian producers. However, new production from this increased activity

began to emerge at a time when natural gas demand was weakening. Growth in North American natural gas demand stalled in 2001 due to the combined effects of a slowing North American economy, mild weather, and consumers' efforts to conserve or switch fuels to avoid high natural gas prices. As a result, production exceeded demand and storage levels were re-built to near-record levels, causing a steep and steady decline in natural gas prices during the latter part of 2001.

Alberta spot natural gas prices (Figure 6) have dropped by about 70 percent from the peak prices experienced in the first quarter of the year. Despite this decline, the average Alberta gas price of about \$5.90 per gigajoule in 2001 is a significant increase from the average of \$4.80 per gigajoule in 2000. The high volatility in the natural gas price has also been a challenge to Canadian producers and consumers, especially in planning of future activity.

While domestic gas consumption was five percent lower in 2001 than in 2000, net export volumes were up three percent. This increase is primarily due to higher volumes exported on the Alliance system (serving the U.S. Midwest) and on the M&NP system (serving the U.S. Northeast) which offset decreased exports at other major export points. These pipelines provided alternative access to export markets and led to overall growth and record demand for Canadian natural gas in 2001.

In Canada, domestic natural gas consumption in 2001 was about five percent lower than a year ago. This was largely due to mild weather, which reduced residential and commercial heating demand, and the response to high prices, which reduced natural gas consumption in the industrial sector. Also, 2001 marked the commencement of natural gas service to the residential and commercial market in New Brunswick; however, this market has been slow to develop and is still limited.

Production

Despite record gas well drilling and completions in Alberta and Saskatchewan in 2001, production increased only marginally. Canadian marketable natural gas production in 2001 totaled 180.7 billion cubic metres, up about 2 percent from 2000 levels. The main sources of new production were the Sable Island offshore project in Nova Scotia and a new gas field at Ladyfern in northeast British Columbia. These sources of incremental production have slightly shifted the distribution of Canadian natural gas supply at the expense of Alberta and Saskatchewan. Alberta now accounts for 79 percent of total Canadian production, down from 81 percent in 2000, and Saskatchewan accounts for 3 percent, down from 4 percent in 2000. British Columbia now contributes almost 14 percent, Nova Scotia 3 percent, Northwest Territories/Yukon 1 percent and Ontario less than 0.5 percent of total Canadian gas production.

Reserves

The NEB's estimate of remaining established reserves of marketable natural gas as at year-end 2000 is 1 622 billion cubic metres. This includes reserves from the East Coast offshore and the Liard Region of the Northwest Territories (Table 6). The volume of remaining established reserves

FIGURE 6
Alberta Natural Gas Prices - AECO/NIT
(\$ per gigajoule)

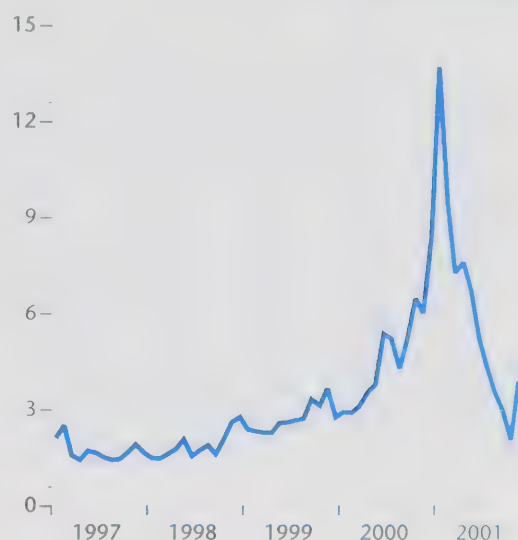


TABLE 6
Estimates of Established Reserves of Marketable
Natural Gas at 31 December 2000
 (billion cubic metres)

	Initial	Remaining
British Columbia ^(a)	607.8	234.3
Alberta ^(b)	4 063.5	1 210.7
Saskatchewan ^(c)	200.3	70.0
Ontario ^(d)	44.3	11.6
NWT and Yukon	25.9	14.4
Nova Scotia - Offshore ^(c)	85.0	81.4
Total	5 026.8	1 622.4

(a) British Columbia Ministry of Energy & Mines and NEB common database

(b) Alberta Energy & Utilities Board and NEB common database

(c) Provincial estimate for 31 December 2000

(d) Canadian Association of Petroleum Producers

TABLE 7
Natural Gas Reserves, Additions and Production
 (billion cubic metres)

	1996	1997	1998	1999	2000	Total
Additions ^(a)	50	130	119	152	153	604
Production ^(b)	159	161	165	170	173	828
Total Remaining						
Reserves	1 721	1 698	1 651	1 629	1 622	

(a) East Coast reserves added in 1997, production started in late 1999

(b) Canadian Association of Petroleum Producers

declined from 1999, albeit by less than one percent, as production continued to outpace reserves additions.

From 1996 to 2000, cumulative additions of marketable gas reserves replaced only 73 percent of total production. Without the Nova Scotia and Liard reserves additions, this would only be 62 percent. Continued and strong concentration by industry on gas exploration resulted in year 2000 additions being the highest in recent years (Table 7). While new discoveries in the Ladyfern area of British Columbia are not fully reflected in the additions for year-end 2000, further drilling in 2001 has provided enhanced delineation of the pool. New discoveries and fewer downward revisions to reserves estimates for existing gas pools resulted in a replacement of 153 billion cubic metres, or 88 percent of natural gas production during 2000. The fact that gas production has been outstripping reserves additions despite very high rates of drilling is an indication that the WCSB is maturing as a producing basin. It will likely be difficult to maintain increases in annual production without ongoing development in the northern and western-most portions of the WCSB, the east coast offshore, and the Mackenzie Delta region.

Natural Gas Exports and Imports

Although there were no major pipelines constructed in 2001, increased throughput on the Alliance and M&NP systems enabled Canadian gas exports and imports to reach new

record highs. In 2001, net export volumes were 102.8 billion cubic metres, an increase of 3 percent from 2000 and an increase of 26 percent over the last five years.

The export market continues to grow as net exports now account for 57 percent of total Canadian production (Figure 7). This is up from 56 percent in 2000 and 50 percent five years ago. The increase in 2001 is primarily due to enhanced access to new markets as a result of the start-up and first full year of operation of Alliance and increased volumes from the Sable Island project on the M&NP system. Gross exports in 2001 reached a record 108.7 billion cubic metres due, in part, to record gas volumes being re-imported to Canada. As much as 30 percent of the gas moved on Alliance is imported back into southern Ontario via Vector's pipeline. Imports on Vector accounted for about 4.2 billion cubic metres in 2001, or 72 percent of the 5.8 billion cubic metres of total imports. Prior to this, gas import volumes had been negligible.

The distribution of export sales in 2001 reflects the increased volumes flowing to the Midwest and Northeast on these pipelines and are now as follows: 39 percent to the Midwest, 30 percent to the Northeast, 16 percent to California, 14 percent to the Pacific Northwest, and less than 1 percent to the Mountain Region (Figure 8).

The proportion of Canadian gas exported under short-term orders increased significantly in 2001 to almost 80 percent from 73 percent in 2000. The increase in short-term arrangements since November 2000 is due largely to increased volumes on the Alliance and M&NP systems. Both the volume and average price for exports in 2001 were up significantly from 2000.

Higher export volumes and higher average prices for Canadian gas have translated into increased revenue from natural gas exports. In 2001, the revenue from Canadian natural gas exports rose by 25 percent to a record \$26.0 billion, up from \$20.7 billion in 2000. Gas imports also rose to a record level of \$1.4 billion, resulting in net export revenues of \$24.6 billion for the year.

FIGURE 7
Canadian Natural Gas Production and Net Exports
(billion cubic metres)

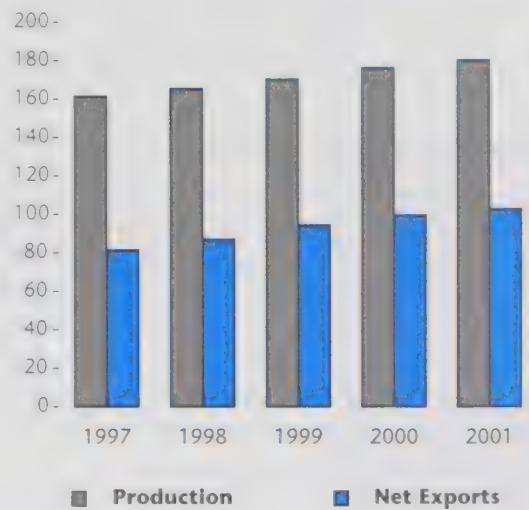
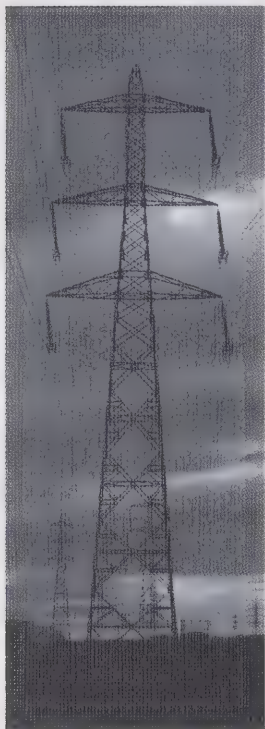


FIGURE 8
Natural Gas Supply and Disposition
(billion cubic metres)



Electricity

With respect to the electricity industry, the Board's regulatory mandate relates primarily to the construction and operation of international power lines and the export of electricity. Challenges are presented by the significant ongoing changes in the structure of the North American electricity industry. The Board must be aware of these changes and their potential impacts, while continuing to perform its legislated regulatory and advisory obligations.



Restructuring and Market Developments

Beginning in the early 1990s, major initiatives have been undertaken to restructure electricity markets in North America. In the traditional market structure, a single utility performed the functions of generation, transmission and distribution of electricity within a defined franchise area, with limited access to other markets. The intent of restructuring is to separate these three functions, and to introduce competition into the generation sector. Also, open access to transmission grids is provided to enable buyers to purchase electricity from the most competitive generation sources.

In 2001, ongoing developments in electricity restructuring took place at an uneven pace across the country. Alberta achieved the most significant step with the first implementation in Canada of retail access to all customers on 1 January 2001. Independent marketers are now allowed to sell electricity in the former service areas of the incumbent utilities. Residential and business consumers can choose the terms and conditions of service from a number of alternative suppliers or a regulated rate option.

After Alberta, Ontario has taken the most significant steps to move towards competitive markets. The wholesale and retail markets were initially scheduled to open in November 2000. In April 2001, the provincial government announced a new target date of May 2002. As in Alberta, when the market opens, consumers will have the choice to buy electricity from competing energy retailers or to continue to receive electricity from the incumbent utilities. While all energy retailers must be licensed by the Ontario

Energy Board, the prices they charge for electricity and other services will not be regulated.

In January 2001, New Brunswick issued a *White Paper on Energy Policy* that contains a restructuring plan for the electricity sector. Under this plan, wholesale competition is expected to be introduced by April 2003, and non-utility generation will be allowed. A government-appointed committee will make recommendations on the development of the electricity market, including its structure and market rules, to the provincial government by April 2002. The white paper implies an expanded role for the New Brunswick Public Utilities Board, including monitoring the competitiveness of the future wholesale market.

In November 2001, an energy policy task force established by the Premier of British Columbia made recommendations for a move to fully competitive electricity markets in an interim report entitled, *Strategic Considerations for a New British Columbia Energy Policy*. Some of the recommendations included: restructuring British Columbia Hydro and Power Authority (BC Hydro) into separate operating entities for power generation, transmission and distribution; providing equitable access to the transmission system; and developing a transition mechanism to move consumer prices to market levels. Public input has been invited. It is expected that the final report to the British Columbia Minister of Energy and Mines will be submitted on 15 February 2002.

In December 2001, Nova Scotia announced a plan for the gradual introduction of a competitive electricity market as part of *Nova Scotia's Energy Strategy*. Competition will be introduced through policies that allow utilities and independent generators to access the transmission system. The plan also includes support for the development of renewable electricity such as wind and the development of clean coal technologies.

In 2001, the United States witnessed the continued evolution of the formation of regional transmission organizations (RTOs). The U.S. Federal Energy Regulatory Commission (FERC) Order 2000 initiated the formation of RTOs with the goal of improving competition in bulk power markets and eventually lowering wholesale electricity prices. Consolidating the operations of existing transmission companies under the control of independent regional organizations is expected to reduce transmission costs and facilitate inter-regional trade. Other potential benefits include an increased ability to plan and co-ordinate additions to the U.S. transmission system.

Given the international nature of the transmission grid, FERC has encouraged Canadian participation and, in some situations, has directed the RTOs to indicate how Canadian transmission entities would be represented while respecting Canadian regulatory sovereignty. Some Canadian entities engaging in trade with the United States have indicated interest in joining RTOs or entering into agreements that would provide similar benefits and obligations.

In September 2001, Manitoba signed a co-ordination agreement with the Midwest Independent System Operator and in December 2001, a proposal for BC Hydro's participation was included in an RTO West submission to the FERC. Alberta, as represented by the Alberta Department of Energy, ESBI Alberta Ltd. (the transmission administrator) and the Power Pool of Alberta, is also considering participation in RTO West.

Ontario considered joining RTOs in adjacent U.S. markets and at year-end was assessing the merits of alternative options. Hydro-Québec has expressed initial interest in an east coast RTO with the Maritimes and nearby states. However, in its most recent strategic plan, Hydro-Québec indicated that the system generated by TransÉnergie constitutes the only RTO in the province of Quebec and is working with neighbouring transmission systems to improve interconnections with New England and New York State.

Electricity Production

Electricity production declined by about 3 percent in 2001 (Table 8), mostly due to poor hydraulic conditions (low water levels) which resulted in reduced hydroelectric production. Total production was also affected by lower domestic demand (down an estimated 0.5 percent). The decline in hydroelectric production was partially offset by increases from nuclear and thermal plants, with nuclear production benefiting from the improved utilization of available capacity.

TABLE 8
Electricity Production
(terawatt hours)

	1997	1998	1999	2000	2001 ^(a)
Hydroelectric	345.3	327.7	341.7	353.3	325.0
Nuclear	77.9	67.4	69.3	68.7	74.2
Thermal	131.3	148.8	146.9	160.8	167.0
Total	554.5	543.9	557.9	582.8	566.2

(a) Estimates.

Sources: Statistics Canada, NEB

Exports and Imports

Electricity exports declined to 38.4 terawatt hours from 48.5 terawatt hours in 2000. This was the lowest level of exports since 1993. Hydro-Québec, Manitoba Hydro, British Columbia Power Exchange Commission (a BC Hydro subsidiary known as Powerex), NB Power and Ontario Power

Generation Inc. accounted for 93 percent of electricity exports. Due to low water levels, exports from British Columbia decreased 39 percent from 2000. Quebec, Ontario and New Brunswick also experienced lower export volumes (decreases of 27 percent, 22 percent and 14 percent, respectively). Exports from the hydro-rich provinces of British Columbia and Quebec declined by 9 terawatt hours, and total exports to the United States declined by 10.1 terawatt hours.

A number of factors in the U.S. market also contributed to lower exports in 2001. California began to recover from its electricity crisis as demand growth moderated and new generation came online. Cool temperatures reduced the need for electricity to run air conditioners throughout the United States. Demand decreased further as the U.S. economy went into a recession, and electricity-intensive industries reduced production. Dry weather reduced hydroelectric production, resulting in less electricity available for export.

Despite the decrease in exports, export revenue increased to \$4.2 billion. On average, for each megawatt hour of electricity exported, Canadian exporters earned \$110 compared with average revenue of \$84 per megawatt hour last year, and \$47 per megawatt hour over the last five years. Exports into the high-priced California market accounted for much of the increase, as power was being sold to California at an average rate of more than \$700 per megawatt hour from January to May 2001. As a result of high energy prices in the western United States, Powerex earned 47 percent of total Canadian electricity export revenues, although accounting for only 15 percent of the export volumes.

Except in Alberta, electricity prices paid by Canadian consumers in 2001 were largely regulated and stable. In Alberta, increased prices were partially offset by provincial rebates to consumers. In Ontario, price increases resulted from the pass-through of higher approved generation and distribution costs.

Imports increased to a record setting 16.1 terawatt hours, up 27 percent and substantially above the 9 terawatt hour annual average from 1996-2000. Imports to British Columbia increased to 2.8 terawatt hours. Due to the poor hydro conditions, British Columbia had to purchase power back from expensive western markets during off-peak periods. Ontario also had higher imports.

Figure 9 shows the interprovincial and international transfers of electricity in 2001.

FIGURE 9
International and Interprovincial Transfers of Electricity^(a)
 (gigawatt hours)



SAFETY AND ENVIRONMENT

Goal 1:
*NEB -
regulated
facilities
are safe and
perceived to
be safe.*

Goal 2:
*NEB -
regulated
facilities are
built and
operated in
a manner
that protects
the
environment
and respects
individuals'
rights*

A primary aspect of the NEB's purpose is to promote safety and environmental protection. This is reflected in two of the NEB's four corporate goals. While these two goals have separate intents, they are operationally linked and form the cornerstones of the NEB's physical regulation program. Initiatives undertaken by the NEB often result in both increased safety and increased protection of the environment.

The NEB's regulatory responsibilities for public safety, as well as for the protection of the environment, are set out in the *National Energy Board Act* and the *Canada Oil and Gas Operations Act*. The NEB is also required to meet the requirements of the *Canadian Environmental Assessment Act* and the *Mackenzie Valley Resources Management Act* by ensuring that environmental assessments, including follow-up compliance monitoring requirements, are properly conducted for projects under its jurisdiction.

The inherent risks associated with facilities under the NEB's jurisdiction are effectively managed through competent design, construction, operation and maintenance practices. As designer, builder and operator of a facility, a pipeline company has the greatest control and, as such, has the primary responsibility for its facilities. The NEB plays a significant role in safety and environmental protection by ensuring that a regulatory framework that encourages companies to maintain or improve their performance is in place and in line with public expectations.

The Board verifies that any risks associated with the construction and operation of regulated facilities are properly assessed and managed by pipeline companies. The Board does this by:

- assessing new facilities applications for associated safety and environmental issues
- ensuring appropriate mitigative measures, conditions, and environmental protection plans are in place before granting project approval
- monitoring construction and operation to verify that regulatory requirements, as well as other standards identified through the application process, have been met and will continue to be maintained
- investigating any failures or incidents that occur, with the intent of preventing similar incidents
- developing regulations and guidelines for the safety and protection of the public, property and the environment

In order to meet its safety and environmental goals, the NEB has put significant effort into the development of its own safety and environmental management system. The integration of the above five activities under the umbrella of the Board's management system is an important aspect of effective risk management.

Linking the management system is accomplished through an initiative called the Environment and Safety Information Management System (ESIMS) project. This project is aimed at developing an electronic information management system database for recording and tracking environmental and safety issues relating to the construction and operation of NEB-regulated facilities.

To provide a better evaluation of the effectiveness of safety programs among NEB-regulated companies, in April 2001, a letter was sent to all companies requesting that specific safety-related data be provided to the Board for the year 2000. Twenty-four companies responded to the request representing more than 75 percent of the total length of federally regulated pipelines. After additional consultation with industry associations, in December 2001 a letter was sent to all companies requesting specific safety-related data for the year 2001. The Board expects to release the results of the indicators in 2002 as a benchmark for future years.

Regulatory Decisions and Environmental Assessments

Regulatory Decisions Related to Safety and Environmental Protection

As part of its regulatory role, the NEB evaluates public interest issues related to its mandate. With respect to safety and environmental protection, these issues include the review of engineering design, the assessment of environmental effects and proposed mitigation, and the consideration of land-related issues. In 2001, there was an example of such a review relating to Westcoast's Pine River Gas Plant and Sulphur Pipeline where notable safety and environmental concerns arose.

In March 2001, after a number of fires on the sulphur pipeline, the Board issued an order directing Westcoast to stop all work on the pipeline except for emergency work, and cease operating the pipeline pending a further order from the Board. The Board decided to hold a public hearing to determine if the sulphur pipeline could be safely operated and if conditions should be imposed on Westcoast in order to ensure its safe operation.

Following a public hearing in April 2001, the Board denied Westcoast permission to reopen the pipeline until all safety issues were resolved. The Board directed Westcoast to develop, in consultation with local residents, a comprehensive action plan to ensure safe operation of the pipeline. Westcoast filed its plan in July 2001. After examining the plan and receiving comments from interested parties, the Board decided to allow Westcoast to reopen the pipeline for operation subject to meeting certain conditions. The pipeline was reopened in December 2001.

Environmental Assessments

The Board ensures that the applications it receives are assessed in compliance with the *Canadian Environmental Assessment Act*. For the majority of projects under the NEB's mandate, an



environmental screening is carried out under that Act. Certain applications require that a Comprehensive Study Report (CSR) assessing environmental issues is completed and approved by the Minister of the Environment before the regulatory process can proceed. In 2001, the NEB was lead responsible authority for two applications that required a CSR. For both of these projects, the Board delegated the preparation of the CSR to the applicants (NB Power and Westcoast). The Board will continue its regulatory assessment of these applications after the respective reports are considered to be complete and submitted to the Minister of the Environment. Where projects do not require an assessment under the *Canadian Environmental Assessment Act*, the Board conducts reviews as part of its mandate under the *National Energy Board Act*.

Under the *Canadian Environmental Assessment Act*, a Responsible Authority may request the Minister of the Environment to refer the project to a review panel. In September 2001, following a request from the NEB, a joint panel was established to review the Georgia Strait Crossing application. This project is the Canadian component of a proposal for a new international pipeline to transport natural gas from Sumas, Washington to Duncan, British Columbia, on Vancouver Island. Fisheries and Oceans Canada is the other Responsible Authority. The joint panel will apply both the *Canadian Environmental Assessment Act* and the *National Energy Board Act* to its review of the project. It will make recommendations to the Minister of the Environment on environmental assessment matters and will make decisions concerning the proposed project on all other public interest matters, including safety and environmental matters, under the *National Energy Board Act*.



Compliance Monitoring

NEB field inspection officers monitor the construction of a pipeline to verify compliance with:

- the conditions of the project approval
- the requirements set out in the NEB's *Onshore Pipeline Regulations, 1999 (OPR-99)*, relevant codes, and the pipeline company's construction safety manual
- the commitments set out in the pipeline company's environmental protection plan and its application

Once a pipeline is in operation, NEB inspection officers conduct safety inspections of pipeline facilities, such as pump or compressor stations, on a periodic basis depending on the risk posed by the operating facility. Safety inspections are conducted to determine compliance with the requirements of NEB regulations and the *Canada Labour Code, Part II*. The NEB also conducts inspections along existing pipeline systems to identify whether third party excavation work is being completed in compliance with the *National Energy Board Pipeline Crossing Regulations*. In addition, NEB inspectors conduct environmental monitoring inspections of operating pipelines to evaluate the success of construction reclamation and to verify that the environment is being properly protected.

In the frontier lands¹, the NEB conducts inspections related to geophysical and drilling programs and production operations to verify compliance with the approved program and relevant regulations. Occupational safety and health matters are also addressed during these inspections.

1 Frontier lands, in simple terms, refer to lands that are situated in the Northwest Territories, Nunavut or Sable Island, or submarine areas, not within a province, in the internal waters of Canada, the territorial sea of Canada or the continental shelf of Canada.

The NEB supports a co-operative approach to compliance, working with pipeline companies to ensure that environmental commitments and safety requirements are met. As part of this approach, the NEB is placing increased emphasis on appropriate safety and environmental training for construction personnel. Often, NEB field inspectors will conduct presentations for construction crews on safety and environmental requirements and the NEB's responsibility to monitor compliance.

Non-compliance with NEB requirements is generally handled in one of two ways: an NEB inspection officer will receive an assurance of voluntary compliance (AVC) from a pipeline company for minor areas of non-compliance that cannot be corrected immediately, or NEB inspection officers will issue a field order when they find a situation that could jeopardize safety or the environment. These situations must be corrected immediately by the company. In 2001, the NEB received 139 AVCs and issued 2 field orders for non-compliant activities. This is similar to 2000 levels.

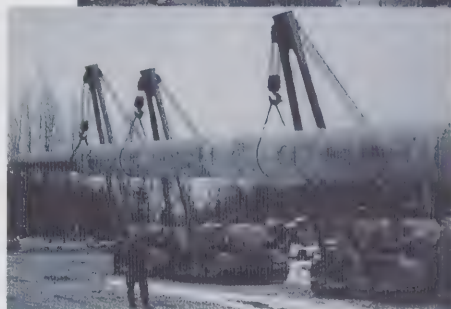
The NEB tracks compliance with conditions issued on facility approvals using its ESIMS. This system allows conditions to be tracked for compliance and for effectiveness (that is, whether the condition resulted in achievement of the desired result). To date, ESIMS has been used to track more than 800 conditions on over 185 pipeline construction projects. The effectiveness of conditions related to the construction of a project and imposed to protect the environment (environmental conditions) has recently been identified as a performance indicator measuring the achievement of the NEB's Goal 2. In 2001, information received by the Board indicated that 56 percent of environmental conditions achieved their desired end result while 4 percent did not. The remaining 39 percent are under review. The NEB is using this information to improve the clarity and effectiveness of conditions that it places on facility approvals.

One such improvement implemented in 2001 involved the inclusion of a standard condition that requires companies to self-report on compliance on all NEB section 52 certificates and section 58 orders. This has increased the NEB's ability to monitor compliance and encourages companies to develop their own compliance monitoring systems.

Once the construction of a pipeline or facility is complete, but before the new facility can be put into operation, pipeline companies must apply to the NEB for permission to open the facility. When the Board is satisfied that the pipeline is safe to operate, it will grant approval to open the facility. During 2001, the Board issued 24 orders granting leave to open pipelines, pipeline sections or other facilities. This number represents an 85 percent decrease from the previous year and reflects the decrease in the number of facilities built during the year.

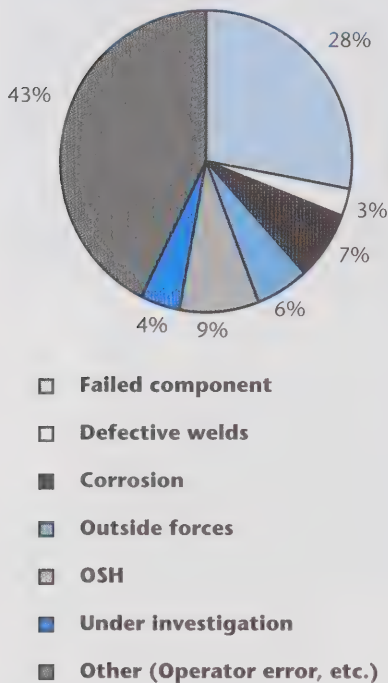
Management System Audits

With the release of the OPR-99, the Board continued its progression towards goal-oriented regulation. In the goal-oriented approach, the regulations identify the goals that must be attained by pipeline companies, with the companies selecting the best methods to meet these goals. The OPR-99 goals relate to the technical, safety and environmental requirements for all stages of a pipeline's life cycle. Each company must be prepared to demonstrate the adequacy and effectiveness of the methods chosen and employed.



To ensure compliance with the OPR-99, the Board used a risk-based methodology to select companies for audit of their systems, programs, procedures, specifications, records and documentation, and to perform inspections during the construction and operation of pipelines and facilities.

FIGURE 10
Causes of Incidents in 2001



Three audits were conducted in early 2001 with a scope that included emergency response, continuing education and pipeline integrity programs. The audit process included a pre-audit meeting with the company, documentation review, field verification, and preparation of an audit report. The expected elements were also provided to the company prior to the audit in order to assist them in their preparation for the audit. In response to the audit findings, companies were required to submit a corrective action plan to the Board. Three more audits were conducted in the second half of 2001 and incorporated additional aspects of the OPR-99, including environmental matters.

In early 2002, the Board will review its audit program to identify improvements, including the development of an overall audit strategy that will incorporate various risk elements in establishing an appropriate audit cycle time, as well as a risk prioritization tool to identify specific companies for audit.

Incident Investigation

The NEB is continually looking for ways to improve safety and requires pipeline companies to provide information on pipeline safety performance by immediately reporting incidents on their systems.

Even minor incidents can provide indications of the condition of a pipeline or of required improvement to safety programs. The NEB investigates all reported incidents to determine if any trends are evident and to take action, if necessary, to prevent similar occurrences in the future. In general, the NEB conducts on-site investigations only for incidents that result in death, serious injury or a significant release of hydrocarbons. Figure 10 represents the causes determined for incidents that occurred in 2001.

An accident resulting in a fatality occurred on a seismic program in the Northwest Territories on 17 March 2001. The NEB investigated the accident under the *Canada Oil and Gas Operations Act* and under the *Canada Labour Code* on behalf of Human Resources Development Canada. In October 2001, the NEB issued a Safety Advisory to operators identifying the hazard and advising them to modify either their equipment or procedures to further reduce the hazard to their employees. A report was submitted by the NEB to Human Resources Development Canada to further assist in its independent investigation.

Sixty-eight incidents were reported under the OPR-99 in 2001. While the number of reported incidents in 2001 is significantly higher than the 47 reported the previous year, it is still somewhat lower than the seven-year average of 77 incidents (Figure 11). The rise in incidents is attributed to an improvement in incident reporting by companies regulated by the Board. In 2001, four incidents resulted in injuries to pipeline workers, with only one of those directly related to construction. This number is down slightly from the year 2000 total of five injuries, including one directly related to construction.

Of the 68 incidents reported in 2001, over one-half occurred in controlled areas such as compressor stations or gas plants. Typically, the public is not exposed to the safety risks

associated with incidents in these types of controlled areas. Twenty incidents occurred at compressor or pump stations, 18 at gas plants, and the remainder occurred along the pipeline right of way.

The NEB has a safety target of zero ruptures on the pipelines it regulates. In 2001, there were two ruptures on NEB-regulated pipelines, both occurring on pipelines owned and operated by Enbridge.

The first rupture occurred on 17 January 2001 on Enbridge's heavy crude oil line downstream of Hardisty, Alberta. Approximately 3800 cubic metres of crude oil were released into an ice-covered slough. A final investigative report by the Transportation Safety Board into the cause of this rupture is expected early in 2002.

On 29 September 2001, a rupture occurred on an Enbridge crude oil pipeline near Binbrook, Ontario, south of Hamilton. Approximately 95 cubic metres of crude oil was released onto a soybean field. The cause of this incident is currently under investigation.

The NEB has the responsibility to verify that all companies under its jurisdiction have adequate emergency response plans to mitigate any negative effects on personnel safety, public health or the environment resulting from oil spills or natural gas leaks. Response plans are examined to ensure that appropriate procedures are in place. In addition, the NEB encourages and participates in emergency response exercises sponsored by pipeline companies.

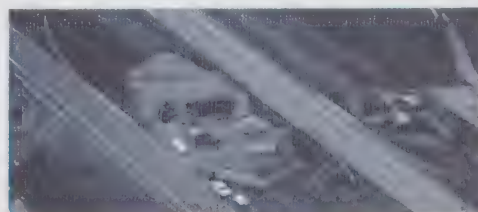
The NEB's primary role during an emergency is to monitor the pipeline company's response, ensuring that all reasonable actions are being taken to protect public safety and the environment. The NEB uses an information tracking system to verify that the company fulfills its remediation responsibilities regarding sites that have been affected by spills or releases. In 2001, 46 spills and releases were reported, up from 32 reported the previous year. Of these 46 spills, 4 were termed 'significant'.

In the frontier region, hazardous occurrences, as defined by the *Oil and Gas Occupational Safety and Health Regulations*, increased from 64 in 2000 to 79 in 2001. Most of this increase was related to equipment damage; however, there were no disabling injuries or major spills associated with these incidents. Disabling injuries decreased from 5.3 per million hours worked in 2000 to 3.1 per million hours worked in 2001.

Development of Regulations and Guidelines

A key activity in promoting safety and environmental protection is the development of regulations. The NEB is continuing the move toward a goal-oriented approach to its regulations, to promote increased industry responsibility, allow for flexibility and efficiency, and provide opportunities to adopt improved operational and safety techniques in a more timely manner. The NEB's goal-oriented regulations rely heavily on consensus standards, such as those developed by the Canadian Standards Association, and place increased emphasis on risk

FIGURE 11
Pipeline Incidents and Ruptures 1994 to 2001



assessment and management systems. The NEB has published Guidance Notes, which describe what it considers acceptable practices, to provide clarity, practical advice and suggestions to facilitate compliance with the regulations.

The NEB is currently developing two new goal-oriented regulations. The first deals with the design, construction, operation and abandonment of federally regulated gas processing plants. The second deals with damage prevention for buried pipelines. These two regulations are anticipated to come into effect in 2002 and 2004, respectively.

In preparation for the development of new regulations that will govern pipeline safety, the Board released the results of a survey in February 2001 entitled *National Energy Board Damage Prevention Regulations Survey*. Over 100 respondents representing interested companies, groups and individuals provided valuable information regarding issues related to this initiative. A copy of this report can be found on the NEB Internet site.

The NEB is also active in developing and maintaining regulations regarding exploration and development activities under the *Canada Oil and Gas Operations Act*. These regulations, developed in co-operation with Natural Resources Canada, the Canada-Newfoundland Offshore Petroleum Board, the Canada-Nova Scotia Offshore Petroleum Board, Nova Scotia Department of Natural Resources and the Newfoundland and Labrador Department of Mines and Energy, ensure common regulatory approaches for activities in the offshore regions, the Northwest Territories and Nunavut. To this end, consultations were continued in 2001 to amend many of the regulations and guidelines under the *Canada Oil and Gas Operations Act* and mirror regulations under the Accord Implementation Acts.

The NEB has provided advice to Human Resources Development Canada for the update of the *Oil and Gas Occupational Safety and Health Regulations* under the *Canada Labour Code, Part II*. In August 2001, an amendment came into force under the *Canada Occupational Safety and Health Regulations*. The amendment resulted in increased clarity of federal regulatory authority over pressure vessel and pressure piping in the oil and gas pipeline sector.

The Board participates with industry, government and stakeholder groups in a number of initiatives to develop consensus-based standards, best practices, and common approaches to safety and environmental issues. An example of the NEB's participation is in the revision of the standard for oil and gas pipeline systems, CSA Z662, scheduled for issue in 2003.

Research and Development

The NEB acts as the secretary for the Environmental Studies Research Funds (ESRF) management board, which provides funding for environmental and social projects regarding petroleum exploration, development and production activities on frontier lands.

In 2001, the ESRF management board approved eight new studies and continued to provide funding for *Updating of the CSA Offshore Structures* and the development of an abstract of existing studies and reports related to oil and natural gas development in the North. The ESRF management board also awarded a contract for a study on *The Effects of Seismic Energy on Snow Crab* for which work will commence in 2002. Two previous reports were finalized and released. As well, in 2001, ESRF established a presence on the Internet at www.esrfunds.org.

ECONOMIC EFFICIENCY

The Board's third corporate goal is to ensure that Canadians derive the benefits of economic efficiency. There are three main ways in which the Board has an economic impact:

- through the decisions it renders
- through the energy market information it provides to Canadians
- through the efficiency of its regulatory processes

In addition, the Board must manage its own expenditures efficiently.

Impact of NEB Decisions

The Board strives to promote, through its decisions, the development of an efficient natural gas and oil pipeline infrastructure that meets the needs of its users. An efficient infrastructure requires that there is an appropriate level of capacity to meet both upstream and downstream needs, that shippers have adequate service options, and that pipeline companies earn an appropriate return on their investments.

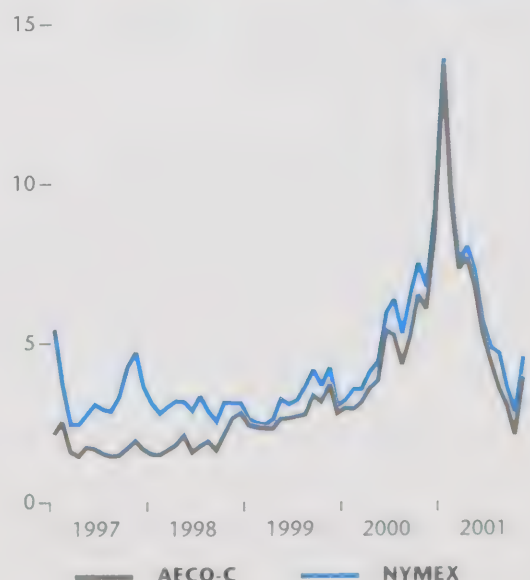
A good market measure of the adequacy of pipeline capacity can be obtained by examining the prices between key market hubs. In the natural gas market, two of the most important hubs in North America are the AECO "C" Hub in Alberta and the Henry Hub in Louisiana. Figure 12 illustrates that prices associated with the two supply hubs have been closely connected since late 1998, indicating that there has been adequate capacity between the WCSB and eastern markets.

For a brief period in January 2001, prices at the Sumas hub in Washington State significantly exceeded the prices at AECO "C". This pricing phenomenon may be related to pipeline capacity serving the lower mainland area in British Columbia and the U.S. Pacific Northwest. It may also be related to heavy demand at the time for Canadian gas to fuel electricity generation in the California market. The Board notes that shippers signed long-term contracts last spring in support of a proposed 5.7 million cubic metres per day expansion of the Westcoast system which would increase capacity between the producing basin and the lower mainland.

Another measure of the efficiency of the pipeline transportation sector is the number of service options available to shippers and gas buyers. Producers in the

Goal 3:
*Canadians
derive the
benefits of
economic
efficiency.*

FIGURE 12
NYMEX vs. AECO "C" Natural Gas Price
(\$ per gigajoule)



WCSB have an additional transportation alternative since the start-up of the Alliance pipeline system, which provides a different service package than TransCanada. At the same time, TransCanada has been introducing new service options in recent years, including services such as enhanced capacity release and parking and loans services. Gas buyers in Ontario and Quebec similarly have more options since the start-up of the Vector pipeline system, which connects Alliance and other U.S. pipelines to southern Ontario. A market hub is developing at Dawn, Ontario that allows many eastern gas buyers to simply purchase gas at the hub and elect not to hold transportation capacity on long-distance pipeline systems.

On the oil transportation side, the Board approved the Enbridge Terrace Phase II Expansion Program in the spring of 2001. The expansion will increase heavy oil throughput capacity, thus averting potential capacity constraints that could have resulted in the shut-in of heavy oil reserves.

In 1994, the Board made a decision on a generic return on equity formula, which was intended to apply to most of the large pipelines under Board jurisdiction. Shortly thereafter, there were a number of negotiated settlements between pipeline companies and their shippers, pursuant to which they mutually agreed upon tolls and tariffs. As these were multi-year agreements, the Board had very few hearings on tolling matters for several years. The Board's generic formula is embedded in a number of the negotiated settlements, although some settlements include alternative means of determining the appropriate return on equity.



There are no direct measures of the appropriateness of the returns being earned by pipelines. However, the fact that most pipelines and shippers accepted the return on equity determined by the generic formula indicates that the formula worked well for many years. The Board notes, however, that there have been many recent changes in the

structure of the pipeline transportation sector. In this changed environment, it may be more difficult for the pipelines to reach unanimous agreements with their shippers. Indications of this surfaced in 2001, as the Board held four hearings on toll matters. The Board also received an application from TransCanada requesting that it review TransCanada's return on capital employed.

There has been considerable interest in strengthening the links in the North American electric power grid since the United States has been opening up its wholesale electric power markets. In 2001, the Board received three applications for international power line facilities.

Energy Market Information

The Board has a responsibility to maintain a thorough understanding of energy markets in order to appreciate fully the impacts of the decisions it makes on market participants. The Board monitors the gas market to ensure that Canadian gas buyers have access to Canadian natural gas on similar terms and conditions as are available to U.S. buyers. Finally, the Board believes that Canadians should be informed about the operation of Canadian energy markets. For all of these reasons, the Board monitors energy markets and reports on market developments on an ongoing basis.

Fair Market Access to Natural Gas, Oil and Electricity

The Board monitors the domestic price of Canadian-produced natural gas versus the price of natural gas exports. In an open competitive market, one would expect that the commodity price paid for natural gas, for example at the Alberta border, would be essentially the same for all gas

buyers, whether domestic or foreign. Figure 13 shows that the prices paid by domestic and export buyers were, in fact, very close throughout 2001.

With respect to crude oil, a similar relationship between domestic and export prices exists, which again demonstrates that Canadians have access to Canadian crude oil on price terms at least as favourable as export customers (Figure 14).

The Board also monitors electricity markets, although this is somewhat more difficult due to the lack of functioning open markets in many parts of the country.

Energy Market Assessments

As part of its energy monitoring activities, the Board issues EMA reports that provide analyses of issues related to the major energy commodities on either an individual or integrated basis. The Board augments its analyses by consulting parties with an interest in the respective subject areas. In 2001, the Board issued two EMA reports addressing the areas of electricity and natural gas liquids and a technical report on heavy oil resources. Every three to five years the Board also issues a long-term study of Canadian energy supply and demand. The most recent study was initiated in early 2001 and will be published in early 2003.

The *Canadian Electricity Trends and Issues* EMA was released in May 2001. This EMA examined electricity demand and generation in Canada and provided a province-by-province analysis of trade, regulatory developments and electricity prices. The report noted that even with rising electricity demand in recent years, provincial electricity markets seemed to be adequately supplied. The report also noted that consumer prices were generally stable over the past several years in all provinces except Alberta, where higher prices in 2000 and 2001 resulted from a somewhat tighter supply situation. While Canadian electricity generation is predominantly hydro-based and is generally cost-competitive within North America, many new generation projects are expected to be gas-fired. Regarding deregulation, the EMA notes that restructuring of electricity markets is proceeding along different paths across the country reflecting decisions made by each province.

The second EMA, entitled *North American Natural Gas Liquids Pricing and Convergence*, also released in May 2001, provided a background on NGL pricing and the impact of energy price convergence. This

FIGURE 13
Eastern Export and Domestic Gas Price at the
Alberta Border
(\$ per gigajoule)



FIGURE 14
Light Crude Oil Export and Posted Price at
Edmonton
(\$ per cubic metre)



EMA notes that the high natural gas prices of late 2000 to early 2001 impacted not only NGL prices, but also how liquids were valued in the market place. Depending on the relative prices of oil, gas, and NGLs, producers with discretionary volumes can decide whether to extract liquids or leave them in the gas stream.

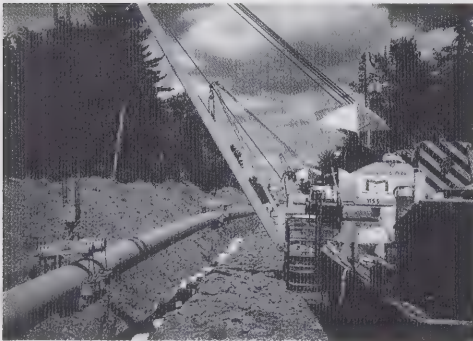
In August 2001, the Board released a technical report entitled *Conventional Heavy Oil Resources of the Western Canada Sedimentary Basin*. This report concluded that the estimate of heavy oil resources of the WCSB had been understated in the past, and indicated an increase of 20 percent in the estimate of oil-in-place volumes. The study further concluded that with the enhancement of present day technologies and the application of future technologies, 21 percent of currently discovered resources and 12 percent of undiscovered resources would be ultimately recoverable, adding 95 million cubic metres to estimates of ultimately recoverable volumes.

Natural Gas and Electricity Prices - Frequently Asked Questions (FAQs)

In order to provide the public with further information and explanation on developments in natural gas and electricity markets, the Board is maintaining its FAQ section, initiated in 2000, on its Internet site. The FAQ section addresses concerns regarding pricing, the underlying supply and demand forces at work in the marketplace, and the Board's role in approving natural gas exports. The electricity questions address the regulation of the industry, price formation, restructuring of electricity markets, and the Board's role in approving electricity exports.

Ongoing Monitoring

The Board compiles several statistical reports related to its regulatory role in the oil, gas and electricity industries. Data is compiled on a monthly basis and annual summaries, as far back as 1985, are available. Subject areas include: natural gas exports, imports, volumes and prices; exports of propane and butane; crude oil and petroleum product exports; light and heavy crude oil export prices; crude oil supply and disposition; and imports and exports of electricity. The reports are available on the Board's Internet site.



Regulatory Efficiency

In order to increase its regulatory efficiency, the NEB not only strives to improve the efficiency of its existing processes, but also endeavours to prepare effectively for major future regulatory events.

Applications Processing

Revisions to the Board's Streamlining Order in late 2000 eliminated the need for companies to apply for many of the routine facilities projects that take place on company property, but do not have any environmental, safety or

third party concerns. This reduced the number of small facilities applications that the Board processed in 2001 relative to the number it would have had to process had the Streamlining Order not been revised. The applications that were filed tended to be complex in nature and required longer processing times.

Mediation Practice Direction

In August 2001, the Board adopted a Mediation Practice Direction that established a voluntary mediation process for the resolution of landowner objections during detailed route hearings. This process provides an alternative method for landowners and companies to resolve disputes over the detailed routes of pipelines and power lines.

Surveillance Reporting

In early 2001, the Board initiated a process to examine the appropriate level of surveillance reporting under Part XI of its *Guidelines for Filing Requirements* (GFR). On 6 December 2001, the Board announced that, based on comments received from interested parties it had decided to amend its GFR for surveillance reporting.

Companies operating under the cost of service method of regulation will continue to be required to submit quarterly reports, but will now be required to include monthly throughput information. Further, these companies will also be required to submit interim reports while on interim tolls.

Companies regulated under an incentive type settlement will be allowed to negotiate filing requirements other than those specified in the GFRs with their shippers. However, the filings must:

- include certain base level information
- be filed at least on an annual basis, except monthly throughput information that must be provided each quarter
- not be suspended during periods of interim tolls

NEB's Expenditures

Table 9 shows the NEB's expenditure and staff levels for the last six fiscal years. Since 1991, up to 90 percent of the NEB's operating costs have been recovered from the regulated community. Additional information on budgets and plans may be found in the NEB 2001-02 Main Estimates, Part II and the 2001-02 Report on Plans and Priorities, both of which are available on the NEB's Internet site.

TABLE 9
Historical Expenditures and Staffing

Fiscal Year (April 1 to March 31)	Expenditures \$000	Full-time Equivalents
1996 - 1997	26 855	272
1997 - 1998	28 048	264
1998 - 1999	53 187 ^(a)	277
1999 - 2000	26 900	286
2000 - 2001	26 216	289
2001 - 2002	27 967 ^(b)	287

(a) In 1998 the NEB made payments of \$22.2 million for out-of-court settlements with the energy industry relating to relocation costs of the NEB from Ottawa to Calgary.

(b) Estimates.

PUBLIC ENGAGEMENT

This past year was a year of significant innovation with respect to Goal 4. Throughout its 42-year history, the Board has provided opportunities for the public to participate in the regulatory decision-making process. In recent years, the scope of these opportunities has grown to include broad consultation on new processes, an increased number of meetings and hearings in affected communities, and a wider range of tools for the public to access information about the NEB's operations.

In addition to the activities discussed below, the NEB refined its desired end state for public engagement. This resulted in defining three objectives in the area of public engagement. These objectives are:

- build internal capacity
- understand public engagement needs
- remove barriers to participation

The NEB's activities will be directed towards achieving these objectives in the coming years.

Building Internal Capacity

To be successful, the Board will consistently exhibit a consultative culture with respect to all of its internal and external activities. As well, the NEB needs to have a variety of public engagement tools at its disposal to suit specific situations. During the year, the Board undertook a number of important initiatives to build its internal capacity for public engagement. In addition to staff training in public engagement techniques, the Board initiated project work to define Public Engagement Principles and to build our capacity in Alternative Dispute Resolution.

Understanding Public Engagement Needs

To carry out its mandate appropriately, the NEB needs to understand the needs of the people and groups interested in NEB matters. This includes the needs of participants in specific regulatory proceedings, as well as the needs of groups interested in energy development. In particular, the NEB is interested in becoming more aware of the engagement needs of landowners and Aboriginals. To be successful, the Board must understand the varied needs of the public to engage in NEB matters and to be able to effectively and appropriately meet these needs while ensuring the integrity of the decision making processes.

Board Members' Activities

Equally important to being prepared and accessible for regulatory proceedings is the NEB's need to be well informed of regional perspectives and emerging issues. To further its role as a national regulator, the Board maintains regular contact with a range of stakeholders.

Goal 4:
*The NEB
meets the
evolving
needs of the
public to
engage in
NEB
matters.*

Visit to Atlantic Canada

As part of the Board's efforts to communicate with stakeholders outside of the regulatory process, the majority of Board Members, along with the Chief Operating Officer, General Counsel and the Secretary, travelled to Atlantic Canada during the first week of May 2001. The purpose of the trip was to meet informally with NEB stakeholders and share information, discuss subjects of common interest and build relationships.

During the week, the Board met with several government departments and agencies, associations, companies, and Aboriginal and public interest groups. The visits were well received by all groups and a constructive dialogue was begun. A key message the Board received from Aboriginal and public interest groups was the need for more information on how the Board operates and guidance on how they may participate in Board processes.

Public Consultation

As a result of this dialogue with stakeholders, the NEB is taking steps to incorporate the specific views and needs of stakeholders in its processes. During regulatory proceedings, the Board works to broaden participation options and make the processes understandable to the people who participate in them. To this end, the NEB holds public information meetings and public consultations on regulatory proceedings in which the public has shown a significant interest. The Board also hosted public information sessions and workshops regarding the proposed GSX Project at various locations in British Columbia. Staff of the NEB and CEEA were on hand to assist the public, including First Nations, in preparing for participation in the upcoming public hearing to consider the GSX application, and to explain the participant funding administered by the CEEA. Another alternative approach to dealing with issues took place during 2001, when the NEB held a pre-hearing conference for hearing participants in the TransCanada Fair Return application to discuss procedural matters. The conference allowed procedural issues to be resolved more effectively than in the formal hearing process.

The Board also consults the public during the updating of processes and regulatory instruments. During the year, the Board issued the results of its survey on proposed Damage Prevention Regulations for pipelines. The results of that survey are posted on the Board's Internet site. The Board also conducted an extensive survey of landowners during the year to measure satisfaction levels in dealing with the NEB and the information landowners receive from the NEB as well as pipeline companies in their communities. A reliable database of information has been created so that the Board can continue to measure landowner satisfaction with issues falling within the NEB's mandate.



Aboriginal Engagement

In September 2001, the NEB began to reassess and update its approach to engaging Aboriginals in its regulatory processes. Initial work has been completed. The next steps will include informal discussions with stakeholders and government departments to identify interests and best practices.

Removing Barriers to Participation

To ensure that its processes are effective, the NEB must ensure that there are no unnecessary barriers in the way of those wishing to participate. The Board has had indications that some

parties find the formal nature of many of its processes to be intimidating. It is also important that parties have easy access to the information they need to effectively participate. To succeed, the Board must ensure that it does not employ any processes that present an unnecessary barrier to participation for any member of the public who has a legitimate interest in the outcome of the process. The Board typically holds its public hearings in locations where the public interest in a project is greatest, in order to facilitate public participation in the process.



During 2001, the Board revised its post-hearing questionnaire and designed a questionnaire for participants at public information and consultation sessions sponsored by the NEB. These survey instruments will gather feedback from participants with specific emphasis on identifying barriers to participation and overall satisfaction with Board processes. As a result of the feedback received, the Board continued its effort to improve our hearing processes and to ensure that NEB publications are written in plain language.

Public Information Services

The NEB is aware that, in order to effectively participate in Board matters, Canadians need access to easy-to-understand, timely and relevant information. With this in mind, the Board continues to improve its public information processes by making them more easily accessible and understandable. It is also committed to enhancing electronic access to key Board information and regulatory processes through its Internet site.

Communication Instruments

Internet Site (www.neb-one.gc.ca)

The NEB's Internet site has continued to grow to meet the needs of Canadians interested in NEB matters. Information about the Board's role and regulatory responsibilities, energy market assessment reports, statistical information, frontier lands information, pipeline safety, and tolls is regularly posted. The Board also posts information on current regulatory proceedings including news releases, hearing orders, transcripts of all public hearings, reasons for decision and the monthly *Regulatory Agenda*.

During the past year, the Board has been broadcasting all of its public hearings using streaming audio through its Internet site. This service has been well received by all users and will continue during 2002, with additional improvements made to the service.

News Releases

News releases are issued for matters before the Board. This includes major applications, public hearings, decisions, public consultations and major announcements. In 2001, the Board issued 47 news releases. The Board encourages clients to access news releases via the Internet site, although they are also available from the library, by fax and by mail.

Regulatory Agenda

The NEB publishes a monthly *Regulatory Agenda* which is available on its internet site and in paper copy. Published since 1982, the *Regulatory Agenda* provides updated information about regulatory applications before the NEB and other Board matters.

Information Bulletins

The Board publishes a series of information bulletins and brochures about its activities. During 2001, updating of the information bulletins continued. Updated versions will be available to the public during the course of 2002. A complete listing of the Board's information bulletins can be found in Supplement III of this report.

Electronic Filing

During the fall 2001, the Board reached a milestone and decided to change the supported e-filing document format from Standard Generalized Markup Language (SGML) to Portable Document Format (PDF). This decision was based on lessons learned from the Electronic Regulatory Filing (ERF) pilot launched in April 2001. This change is intended to make it easier for companies to file applications electronically and for parties to participate online in the decision-making process.

Starting February 2002, access to the Board's database of public regulatory documents will be via the Internet site. Those wishing to file electronically will be encouraged to submit documents to the Board using an online form.

Future improvements to e-filing will be covered by the Government On-line initiative as the Board strives to improve its online service offering to all stakeholders.

Toll Free Number

The Board also recognizes that effective communication through these various media does not replace the need for personal interaction. Therefore, the Board welcomes personal communication from the public via its toll free number at 1-800-899-1265. Over the course of 2001, the NEB received nearly 3,800 calls on the 1-800 toll free line, compared with 3000 in the year 2000.

A WEALTH OF EXPERIENCE

The National Energy Board is made up of eight full-time members who were appointed based on their wide range of expertise in energy matters and public policy. Our multi-disciplinary team reflects the diverse perspectives and the practical knowledge required for making decisions on energy projects in the interests of Canadians and advising the Government of Canada on energy issues. Members have private and public sector experience in economics, engineering, environment, finance, law, public participation, safety and science.



Kenneth W. Vollman

A native of Saskatchewan, Mr. Vollman has a Master's degree in Mechanical Engineering from the University of Saskatchewan and is a member of the Association of Professional Engineers of Alberta.

Mr. Vollman has spent his career working in the energy sector gaining his practical experience with oil and gas production while working in the private sector. During his career at the NEB, Mr. Vollman gained experience in energy supply and demand, pipelines, energy regulatory issues and management. In 1998, he was designated as Chairman after serving as a Member and Vice-Chairman.

Over the past 30 years, Mr. Vollman has authored and presented numerous papers at Canadian and international conferences.



Judith A. Snider

Ms. Snider holds a Bachelor of Laws degree from the University of Calgary and a Bachelor of Science degree (mathematics) from Carleton University. She has been a member of the Alberta bar since 1982.



Rowland J. Harrison

Originally from Australia, Mr. Harrison has a Master of Laws degree from the University of Alberta and is a member of the bars of Nova Scotia, Ontario and Alberta. He has gained extensive advisory, consulting and research experience in various aspects of energy regulation and policy during his career.

As a Professor of Law at various Canadian universities, Mr. Harrison taught Oil and Gas Law, Advanced Petroleum Law, Constitutional Law and Administrative Law. He has held senior management positions with a number of organizations including Canada Oil and Gas Lands Administration, the Canadian Institute of Resources Law, the Institute for Research on Public Policy and the Dalhousie Institute of Environmental Studies. Most recently, he was a partner in the Calgary office of Stikeman Elliott, a national and international Canadian law firm.

John S. Bulger

Originally from Manitoba, Dr. Bulger has a Ph.D. in Physical Chemistry from York University in Toronto, as well as a Graduate Management Diploma from McGill University, in Montreal. He has experience in procurement, operations, planning, regulatory affairs and providing advice on energy issues.

Prior to being appointed to the Board, Dr. Bulger held the position of Senior Manager, Regulatory Affairs at Maritimes and Northeast Pipeline in Halifax, Nova Scotia. He also spent almost 20 years at Gaz Métropolitain in various senior management positions. Dr. Bulger began his career at DuPont of Canada Ltd.

Dr. Bulger is a member of the Chemical Institute of Canada.



Jean-Paul Théorêt

A native of Quebec, Mr. Théorêt has a diverse educational and professional background in business, economics, law and energy regulation.

Mr. Théorêt was a Commissioner of the Régie de l'énergie in Quebec for eight years. He was elected to the Quebec National Assembly in 1985 where he served as Parliamentary Assistant to the Minister of Industry, Trade and Technology as well as Vice Chairman of the Committee on Labour and the Economy.

Mr. Théorêt has 30 years of business experience serving as an Executive Vice President of a large food distribution company and owner of food stores in Quebec.



Elizabeth (Liz) Quarshie

Originally from Ghana, Ms. Quarshie has a Master's Degree in Environmental Engineering from Washington State University. She is a member of the Association of Professional Engineers and Geoscientists of Saskatchewan and is a Certified Professional Environmental Auditor.

Ms. Quarshie has more than 15 years experience in the energy sector and has held a portfolio of senior management positions at Cogema Resources Inc. and Cameco in Saskatoon, and directed programs such as occupational health and safety, environmental impact assessments, compliance and public affairs. She also has extensive industry experience in project planning and design, development, implementation, monitoring and decommissioning.

Ms. Quarshie also has experience in radiation protection, air pollution control, solid and hazardous waste management, water and wastewater treatment, research and evaluation, environmental management systems, audits and community development.





Deborah W. Emes

Originally from Saskatchewan, Ms. Emes has a Master of Arts in Economics from the University of Calgary and is a Chartered Financial Analyst. She has practical and academic expertise in providing regulatory, economic and market advice.

Ms. Emes has held positions in the public and private sectors, including Manager, Strategic Services for the British Columbia Utilities Commission. She has also taught rate design and cost of capital training seminars for the Canadian Association of Members of Public Utility Tribunals.



Carmen L. Dybwad

A native of Saskatchewan, Dr. Dybwad has a Ph.D. in Regional Planning and Resource Development from the University of Waterloo. She has an educational background in economics as well as practical and academic expertise in public participation, resource development and the electricity sector.

Dr. Dybwad has held several positions with the Government of Saskatchewan and the Saskatchewan Power Corporation, including Manager of Environmental Policy and Planning. Most recently, she was an assistant professor at the University of Regina where she taught classes in ecological economics, sustainable development and public administration.

Henry A. Regier

On 8 December 1999, Dr. Henry A. Regier was appointed as a temporary Board Member for the Joint Panel Review of the Canadian Millennium Pipeline Project. His term ended 31 December 2001.

Bryan Williams

On 18 September 2001, the Honorable Bryan Williams was appointed as a temporary Board Member, for a term of one year, for the purpose of matters related to the Joint Panel Review of the GSX Canada Pipeline Project.

SUPPLEMENT I

The Board's Mandate

The National Energy Board is an independent regulatory tribunal established in 1959. It reports to Parliament through the Minister of Natural Resources Canada. The Board is a court of record and has the powers of a superior court with regard to attendance at hearings, the swearing in and examining of witnesses, the production and inspection of documents and the enforcement of its orders. At the end of 2001, the NEB had eight permanent board members, of a possible nine. Permanent board members are appointed for a term of seven years.

The Board's regulatory powers under the *National Energy Board Act* include granting authorizations for: the construction and operation of interprovincial and international oil, gas and commodity pipelines; the construction and operation of international and designated interprovincial power lines; the setting of tolls and tariffs for oil and gas pipelines under its jurisdiction; the export of oil, natural gas and electricity, and the import of natural gas. The Board also has regulatory powers under the *Canada Oil and Gas Operations Act* and certain provisions of the *Canada Petroleum Resources Act* for oil and gas exploration and activities on frontier lands not otherwise regulated under joint federal/provincial accords.

The Board's mandate includes providing expert technical advice to the Canada-Newfoundland Offshore Petroleum Board, Canada-Nova Scotia Offshore Petroleum Board, Natural Resources Canada, and Indian and Northern Affairs Canada.

Under the *Canadian Environmental Assessment Act*, the Board is responsible for conducting environmental assessments of the planning, construction, operation, maintenance and abandonment of energy projects within its jurisdiction. Under the *National Energy Board Act* and the *Canada Oil and Gas Operations Act*, the Board's environmental activities have evolved into three distinct phases: evaluating the potential environmental effects of proposed projects; monitoring and enforcing terms and conditions attached to project approvals; and the ongoing monitoring of operations.

The Board is responsible for ensuring the safe operations of the pipelines under its jurisdiction and the Board's inspectors are appointed Health and Safety Officers for the administration of the *Canada Labour Code, Part II*.

The Board provides advice to the Minister on matters relating to its regulatory expertise at the Minister's request. The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*. Below is a listing of acts, regulations, rules and guidelines under which the Board operates or has responsibilities.

Acts

National Energy Board Act
Canada Labour Code, Part II
Canada Oil and Gas Operations Act
Canada Petroleum Resources Act
Canadian Environmental Assessment Act
Energy Administration Act
Mackenzie Valley Resource Management Act
Northern Pipeline Act

Regulations and Orders Pursuant to the National Energy Board Act

Gas Pipeline Uniform Accounting Regulations
National Energy Board Act Part VI (Oil and Gas) Regulations
National Energy Board Cost Recovery Regulations
National Energy Board Electricity Regulations
National Energy Board Export and Import Reporting Regulations
National Energy Board Order No. M0-62-69
National Energy Board Pipeline Crossing Regulations, Part I
National Energy Board Pipeline Crossing Regulations, Part II
General Order No. 1 Respecting Standard Conditions for Crossings by Pipelines
General Order No. 2 Respecting Standard Conditions for Crossings of Pipelines
National Energy Board Rules of Practice and Procedure, 1995
National Energy Board Substituted Service Regulations
Oil Pipeline Uniform Accounting Regulations
Oil Product Designation Regulations
Onshore Pipeline Regulations, 1999
Pipeline Arbitration Committee Procedure Rules, 1986
Power Line Crossing Regulations
Proclamation Extending the Application of Part VI of the Act to Oil (May 7, 1970)
Toll Information Regulations
Section 58 Streamlining Order XG/XO-100-2000

Guidelines and Memoranda of Guidance Pursuant to the National Energy Board Act

Adherence to Environmental Information Requirements under the Board's Guidelines for Filing Requirements (23 December 1997)
Filing of Supply Information in Compliance with the Board's Part VI (Oil and Gas) Regulations (16 May 1997)
Filing Procedures for Section 104 Right of Entry Order Applications (27 October 1999)
Financial Regulatory Audit Policy of the National Energy Board (23 February 1999)
Guidance Notes for the Onshore Pipeline Regulations, 1999 (7 September 1999)
Guidelines for Filing Requirements (22 February 1995)
Guidelines for Negotiated Settlement of Traffic, Tolls and Tariffs (23 August 1994)
Guidelines Respecting the Environmental Information to be Filed by Applicants for Authorization to Construct and Operate Gas Processing and Straddle Plants, Liquid Natural Gas (LNG) Plants and Terminals, Natural Gas Liquids (NGL), Liquid Propane Gas (LPG) and Butane Plants and Terminals, under Part III of the National Energy Board Act (26 June 1986)
Memorandum of Guidance - Concerning Full Implementation of the September 1988 Canadian Electricity Policy (Revised 26 August 1998)
Memorandum of Guidance - Fair Market Access Procedure for the Licensing of Long-term Exports of Crude Oil and Equivalent (17 December 1997)
Memorandum of Guidance - Regulation of Group 2 Companies (6 December 1995)
Memorandum of Guidance - Retention of Accounting Records by Group 1 Companies Pursuant to Gas/Oil Pipeline Uniform Accounting Regulations (30 November 1994)
Performance Measures filed as part of Year-end Quarterly Surveillance Reports (26 January 1996)
Memorandum of Guidance - Financial Information Submitted to the National Energy Board by Group 1 Pipeline Companies (6 December 2001)

Regulations Pursuant to the Canada Oil and Gas Operations Act

Canada Oil and Gas Certificate of Fitness Regulations
Canada Oil and Gas Diving Regulations
Canada Oil and Gas Drilling Regulations
Canada Oil and Gas Geophysical Operations Regulations
Canada Oil and Gas Installations Regulations
Canada Oil and Gas Operations Regulations
Canada Oil and Gas Production and Conservation Regulations
Oil and Gas Spills and Debris Liability Regulations

Guidelines and Guidance Notes Pursuant to the Canada Oil and Gas Operations Act

Guidance Notes for Applicant - Applications for Declaration of Significant Discovery and Commercial Discovery
Guidance Notes for the Canada Oil and Gas Drilling Regulations
Guidance Notes for the Canada Oil and Gas Diving Regulations
Guidelines Respecting Physical Environmental Programs During Petroleum Drilling and Production Activities on Frontier Lands
Offshore Waste Treatment Guidelines

Regulations Pursuant to the Canada Petroleum Resources Act

Frontier Lands Petroleum Royalty Regulations
Frontier Lands Registration Regulations

Regulations Pursuant to the Canadian Environmental Assessment Act

Comprehensive Study List Regulations
Exclusion List Regulations
Federal Authorities Regulations
Inclusion List Regulations
Law List Regulations
Projects Outside Canada Environmental Assessment Regulations
Regulations Respecting the Co-ordination by Federal Authorities of Environmental Assessment Procedures and Requirements

Regulations Pursuant to the Canada Labour Code, Part II

Oil and Gas Occupational Safety and Health Regulations
Safety and Health Committees and Representatives Regulations
Canada Occupational Safety and Health Regulations

Regulations Pursuant to the Mackenzie Valley Resources Management Act

Exemption List Regulations
Mackenzie Valley Land Use Regulations
Preliminary Screening Requirement Regulations

Regulations Pursuant to the Northern Pipeline Act

Northern Pipeline Notice of Objection Regulations
Northern Pipeline Socio-Economic and Environmental Terms and Conditions for Northern British Columbia
Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the Province of Alberta
Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the Province of Saskatchewan
Northern Pipeline Socio-Economic and Environmental Terms and Conditions for Southern British Columbia
Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the Swift River Portion of the Pipeline in the Province of British Columbia
Order Designating the Minister for International Trade as Minister for Purposes of the Act
Transfer of Duties, in Relation to the Pipeline, of Certain Ministers Under Certain Acts to the Member of the Queen's Privy Council for Canada Designated as Minister for Purposes of the Act
Transfer of Duties, in Relation to the Pipeline, of the National Energy Board Under Parts I, II and III of the *Gas Pipeline Regulations* to the Designated Minister for Purposes of the Act
Transfer of Powers, Duties and Functions (Kluane National Park Reserve Lands) Order
Transfer of Powers, Duties and Functions (Territorial Lands) Order

Regulations Pursuant to the Territorial Lands Act

Canada Oil and Gas Land Regulations

SUPPLEMENT II

Companies Regulated by the NEB

The following pipeline companies and electric power entities own or operate interprovincial or international pipelines or power lines under the NEB's jurisdiction. The pipeline companies have been divided into two groups. Group 1 gas and oil pipelines are the major pipeline companies that are subject to active regulatory oversight by the NEB. Group 2 consists of all other pipeline companies under the NEB's jurisdiction.

For purposes of cost recovery, there are three classifications: large, intermediate and small. The criteria for determining a company's classification are based on its size, throughput, and cost of service.

Group 1 Gas Pipelines

Alliance Pipeline Ltd.
Foothills Pipe Lines Ltd.
Gazoduc Trans Québec & Maritimes Inc.
Maritimes and Northeast Pipeline Management Ltd.
TransCanada PipeLines Limited
TransCanada PipeLines Limited, B.C. System
Westcoast Energy Inc.

Group 1 Oil and Products Pipelines

Cochin Pipe Lines Ltd.
Enbridge Pipelines Inc.
Enbridge Pipelines (NW) Inc.
Trans Mountain Pipe Line Company Ltd.
Trans-Northern Pipelines Inc.

Group 2 Gas Pipelines

AEC Oil and Gas	Canadian Natural Resources Limited
AEC Suffield Gas Pipeline Inc.	Centra Transmission Holdings Inc.
AEC West Ltd.	Champion Pipeline Corporation Limited
AltaGas Services Inc.	Chauvco Oil & Gas Ltd.
AltaGas Transmission Inc.	Chief Mountain Gas Co-op Ltd.
ANG Gathering & Processing Ltd.	Devon Energy Canada Corporation
Bear Paw Processing Company (Canada) Ltd.	Duke Energy Canada Pipeline Ltd.
Calpine Canada Resources Ltd.	ELAN Energy Inc.
Canada Customs and Revenue Agency	Enbridge Consumers' Gas Limited
Canadian Hunter Exploration Ltd.	Fletcher Challenge Energy Canada Inc.
Canadian Midstream Pipeline Limited Partnership	Forty Miles Gas Co-op Ltd.
Canadian-Montana Pipe Line Company Limited	Gibson Petroleum Company Limited
	Huntingdon International Pipeline Corporation

Husky Oil Operations Ltd.
 KeySpan Energy Canada
 Many Islands Pipe Lines (Canada) Limited
 Mid-Continent Pipelines Limited
 Minell Pipeline Limited
 Mobil Oil Canada Ltd.
 Murphy Canada Exploration Ltd.
 Niagara Gas Transmission Limited
 Olympia Energy Inc.
 Omers Resources Limited
 PanCanadian Petroleum Limited
 Peace River Transmission Company Limited
 Penn West Petroleum Ltd.
 Pioneer Natural Resources Canada Inc.
 Portal Municipal Gas Company Canada Inc.
 Quest Oil & Gas Inc.
 Rigel Oil and Gas Ltd.
 Sable Offshore Energy Incorporated
 St. Clair Pipelines Ltd.
 Samson Canada Ltd.
 Shiha Energy Transmission Ltd.
 Star Oil and Gas Ltd.
 Superman Resources Ltd.
 Suprex Energy Corporation
 Talisman Energy Inc.
 Taurus Exploration Ltd.
 Union Gas Limited
 Vector Pipeline Limited Partnership
 Wascana Pipe Line Ltd.
 177293 Canada Ltd.

Group 2 Oil and Products

Aurora Pipe Line Company
 BP Canada Energy Company
 Conoco Canada Ltd.
 Dome Kerrobert Pipeline Ltd.
 Dome NGL Pipeline Ltd.
 Enbridge Pipelines (Westspur) Inc.
 Ethane Shippers Joint Venture
 Express Pipeline Ltd.
 Federated Pipe Lines (Northern) Ltd.
 Husky Energy Inc.
 Husky Oil Operations Ltd.
 Imperial Oil Resources Limited
 ISH Energy Ltd.
 Manito Pipelines Ltd.
 Montreal Pipe Line Limited
 Murphy Oil Company Ltd.
 Nexen Marketing
 NOVA Chemicals (Canada) Ltd.
 PanCanadian Kerrobert Pipeline Ltd.

Penn West Petroleum Ltd.
 Pipestone Pipelines Ltd.
 Plains Marketing Canada, L.P.
 Pouce Coupe Pipe Line Ltd.
 PrimeWest Energy Inc.
 Saskatchewan Oil and Gas Corporation
 SCL Pipeline Inc.
 SCL Quebec Pipeline Inc.
 Sun-Canadian Pipe Line Company Limited
 Sun Pipe Line Company
 Taurus Exploration Ltd.
 Williams Energy (Canada) Inc.
 Yukon Pipelines Limited

Commodity Pipelines

Abitibi-Consolidated Inc.
 E.B. Eddy Forest Products Ltd.
 Fraser Paper Inc. (Canada)
 Genesis Pipeline Canada Ltd.
 Penn West Petroleum Ltd.
 Souris Valley Pipeline Limited

Electric Power Utilities Companies Regulated by the NEB

Abitibi-Consolidated Inc.
 Aquila Canada Corp.
 ATCO Electric Ltd.
 ATCO Power Ltd.
 Bonneville Power Administration
 BP Canada Energy Company
 British Columbia Hydro and Power
 Authority
 Canadian Niagara Power Company, Limited
 The Canadian Transit Company
 Candela Energy Corporation
 Chandler Energy Inc.
 CMS Marketing, Services and Trading
 Company
 Columbia Power Corporation
 Cominco Ltd.
 Constellation Power Source, Inc.
 Coral Energy Canada Inc.
 Detroit & Canada Tunnel Corporation
 Duke Energy Marketing Canada Ltd.
 Dynegy Canada Inc.
 Edison Mission Marketing & Trading, Inc.
 El Paso Merchant Energy, L.P.
 Energie Maclaren Inc.
 Engage Energy Canada, L.P.
 Engage Energy US, L.P.

ENMAX Energy Marketing Inc.
Enron Canada Corp.
Entergy-Koch Trading, LP
Farms (including cottage and isolated loads)
Fraser Paper Inc. (Canada)
Hydro One Networks Inc.
Hydro-Québec
IDACORP Energy L.P.
Independent Electricity Market Operator
Inland Pacific Energy Services Ltd.
Lac La Croix Power Authority
Manitoba Hydro
Marketing D'Energie HQ Inc.
Mirant Americas Energy Marketing, L.P.
Montwegan International Energia
Resorce Inc.
New Brunswick Power Corporation

Nova Scotia Power Inc.
NRG Power Marketing, Inc.
Ontario Power Interconnected Markets Inc.
PanCanadian Energy Services
PG&E Energy Trading - Power L.P.
Roseau Electric Cooperative Inc.
St. Clair Tunnel Company
Saskatchewan Power Corporation
Sempra Energy Trading Corp.
Sonat Power Marketing Inc.
Sonat Power Marketing, L.P.
Tractebel Energy Marketing Inc.
TransAlta Energy Marketing Corp.
TransCanada Energy Ltd.
West Kootenay Power Ltd.
WPS Canada Generation, Inc.

SUPPLEMENT III

Documents

Information Bulletins

The Board publishes Information Bulletins on the subjects listed below:

1. Pipeline Route Approval Procedures
2. The Public Hearing Process
3. Non-Hearing Procedures
4. How to Participate in a Public Hearing
5. The Board's Publications
6. Traffic, Tolls and Tariffs
7. The National Energy Board Library
8. Electricity
9. Protection of the Environment
10. Pipeline Tolls and Tariffs: A Compendium of Terms
11. The Frontier Information Office
12. Pipeline Safety
13. Pipeline Regulation: An Overview for Landowners and Tenants

The Board also publishes the following brochures:

Living and Working Near Pipelines - Landowner Guide 2001
Excavation and Construction Near Pipelines, February 2001

Major Documents Published in 2001

Pipeline Facilities

Murphy Oil Company Ltd.
Chinchaga Sales Gas Loop in
Northern British Columbia -
GH-1-2001
Reasons for Decision, March 2001

Westcoast Energy Inc.
Purchase a Pipeline in the
Maxhamish area of Northeast
British Columbia - GH-3-2000
Reasons for Decision, April 2001

Westcoast Energy Inc.
Pine River Gas Plant Sulphur
Pipeline - MH-1-2001
Decision read from the Bench on
12 April 2001

Enbridge Pipelines Inc.
Terrace Expansion Phase II -
OH-1-2000
Reasons for Decision, May 2001

Westcoast Energy Inc.
Pine River Gas Plant Sulphur
Pipeline - MH-1-2001
Reasons for Decision, October 2001

Petro-Canada
Medicine Hat Pipeline - GH-3-2001
Reasons for Decision, December
2001

Tolls and Tariffs

- Murphy Oil Company Ltd.
 - Milk River Pipeline - Toll Complaint
 - Reasons for Decision, August 2001
- BC Gas Utility Ltd.
 - Review of Reasons for Decision
 - RH-2-98 on Tolls - RH-2-2001
 - Reasons for Decision, October 2001
- Maritimes & Northeast Pipeline Management Ltd.
 - Tolls - RH-3-2001
 - Letter Decisions, 8 and 15 November 2001
- TransCanada PipeLines Limited
 - Tolls - RH-1-2001
 - Reasons for Decision, November 2001
- Rate of Return on Common Equity for 2002
 - Letter of Decision, 6 December 2001
- Guidelines for Filing Requirements
 - Revised Part XI entitled Quarterly Surveillance Reports to be filed by Group 1 Pipeline Companies Pursuant to the Toll Information Regulations, 6 December 2001

Electricity

- Coral Energy Canada Inc.
 - Electricity Export
 - Letter Decision, 25 January 2001
- NRG Power Marketing Inc.
 - Electricity Export
 - Letter Decision, 25 January 2001
- El Paso Merchant Energy, L.P.
 - Electricity Export
 - Letter Decision, 20 June 2001
- Entergy Power Marketing Corp.
 - Electricity Export
 - Letter Decision, 9 March 2001
- BP Canada Energy Company
 - Electricity Export
 - Letter Decision, 13 July 2001
- Independent Electricity Market Operator of Ontario
 - Electricity Export
 - Letter Decision, 5 July 2001

- PanCanadian Energy Services
 - Electricity Export
 - Letter Decision, 18 July 2001

Other

- Regulatory Agenda*
 - Twelve Issues - 1 January to 1 December 2001
- Guidance on Provision of a Preliminary Information Package for Gas Development in the NWT Issued jointly by the chairs of the boards and agencies with responsibility for assessing and regulating energy developments in the Northwest Territories, February 2001
- National Energy Board - 2000 Annual Report, April 2001
- Canadian Electricity Trends and Issues An Energy Market Assessment Report, May 2001
- North American Natural Gas Liquids Pricing and Convergence An Energy Market Assessment Report, May 2001
- Practice Direction for the Mediation of Detailed Route Objections, July 2001
- Technical Report, Conventional Heavy Oil Resources of the Western Canada Sedimentary Basin, August 2001
- National Energy Board - 2001-2002 Estimates Part III - Report on Plans and Priorities
- National Energy Board Performance Report For the period ending 31 March 2001
- National Energy Board - Report Pursuant to the *Access to Information Act* and the *Privacy Act* (1 April 2000 - 31 March 2001)

SUPPLEMENT IV

Legal Proceedings

1. Athabasca Chipewyan First Nation, British Columbia Wildlife Federation and the Steelhead Society of British Columbia v. British Columbia Hydro and Power Authority (BC Hydro)

Federal Court of Appeal

The Athabasca Chipewyan First Nation filed an application with the Federal Court of Appeal for leave to appeal a decision of the Board dated 6 January 1999, in which it issued an electricity export permit to BC Hydro. The British Columbia Wildlife Federation and the Steelhead Society of British Columbia also applied for leave to appeal the decision. In each case leave to appeal was granted by the Court and a Notice of Appeal was served on the Board.

On 2 September 1999, the Federal Court of Appeal ordered that the appeals be consolidated.

Decision: The Court, in a judgement dated 14 March 2001, allowed the appeal. The effect of the judgement was to require the Board to receive and consider additional information from BC Hydro regarding changes, if any, to the operation of its facilities that would be occasioned by the issuance of the permits sought and to identify the adverse environmental effects, if any, that would result from such changes.

On 26 September 2001, the Board, as directed by the Federal Court of Appeal, reviewed the evidence submitted by BC Hydro and the submissions of all parties and decided to issue export permits to BC Hydro.

2. Canadian Forest Oil Limited (Canadian Forest) v. Chevron Canada Resources (Chevron) and Ranger Oil Limited (Ranger)

Federal Court of Appeal

On 24 January 2000, Canadian Forest filed a judicial review application in the Federal Court of Appeal in respect of a Commercial Discovery Declaration (CDD) relating to the Fort Liard K-29 gas well issued by the Board to Chevron and Ranger on 5 January 2000. The application sought to quash the Board's decision on the grounds that the Board breached the rules of natural justice and procedural fairness by issuing the CDD before the 30-day waiting period prescribed under the *National Energy Board Act* had run its course and failing to include Canadian Forest in the Board's list of directly affected parties. Canadian Forest also sought interim relief to restrain the Board from issuing any further permits or approvals relating to the development of the area covered by the CDD.

Decision: On 21 June 2001, Canadian Forest filed a discontinuance of the application with the Federal Court of Appeal.

3. *Geophysical Services Incorporated v. The Chairman, National Energy Board and Information Commissioner of Canada*

Federal Court Trial Division

In November of 2000, the Board was served with a judicial review application in respect of a denial pursuant to an Access to Information request. The judicial review application stated that the Board erred in concluding that the disclosure of the information requested could reasonably be expected to result in material financial loss, or prejudice the competitive position of a third party.

Decision: As of 31 December 2001, this matter had yet to be set down for hearing.

4. *Federation of Saskatchewan Indian Nations: The Chiefs of Treaty No. 4 and Treaty No. 8 (FSIN) - Alliance Pipelines Ltd.*

Federal Court of Appeal

On 2 May 2001, FSIN brought an application for judicial review of the NEB's decision of 2 April 2001 to deny FSIN's request that the Board convene a hearing to consider revocation or suspension of the Certificate of Public Convenience and Necessity (GC-98) issued to Alliance. FSIN claimed that Alliance had contravened a term or condition of the certificate.

On 24 October 2001, FSIN filed a Motion Record that the Court concluded did not comply with the Federal Court Rules or with an interlocutory order of the Court. The Court suggested that FSIN consider moving to amend its application.

Decision: As of 31 December 2001, FSIN had not taken any further steps to amend its application.

5. *TransCanada PipeLines Limited (TransCanada) - Cost Recovery Regulations (CRR) - TransCanada's British Columbia System*

Federal Court of Appeal

On 24 October 2001, TransCanada applied to the Federal Court of Appeal for leave to appeal the Board's decision of 27 September 2001 in which the Board reversed TransCanada's entitlement to a 2 percent cap under the CRR for its BC System.

Decision: A discontinuance of the action was filed on 3 December 2001 with the Federal Court of Appeal.

6. *Saulteau First Nations - Westcoast Energy Inc.'s Kwoen Facilities*

Review by NEB

On 22 August 2001, the Saulteau First Nations applied for a review and a stay of an order approving the construction of Westcoast's Kwoen facilities. The Saulteau First Nations' grounds for review and stay were: (i) errors of law or jurisdiction; (ii) changed circumstances arising since the close of the original proceeding; failure by previous counsel to appear before the Board and subsequent appearance by new counsel; (iii) facts not placed in evidence in the original proceedings; and, (iv) nature of the prejudice that will result from the order.

On 24 August 2001, the Board decided to establish a process to consider the submissions of the parties in relation to the application. Specifically, the Board sought submissions on the question

of whether a doubt has been raised as to the correctness of the Board's decision or order and whether a stay should be granted.

Decision: On 5 October 2001, the Board, after having reviewed the submissions of all interested parties, decided to dismiss the application for review filed on behalf of the Saulneau First Nations.

7. *Westcoast Energy Inc.'s Kwoen Facilities*

Review by NEB

On 27 September 2001, the Board decided, on its own motion, to conduct a review of its order approving the construction of Westcoast's Kwoen facilities. On 19 September 2001, Westcoast had informed the Board that it had identified problems with Talisman Energy Inc.'s re-injection well located at b-65-B/93-p-5(b-65 well) and that the connection of the Kwoen facilities as approved by XG-W005-22-2001 to the b-65 well appeared to be in serious doubt. The Board noted that the b-65 well is fundamental to the operation of the Kwoen facilities as approved. In the absence of a connection between the Kwoen re-injection pipeline and the b-65 well, the viability of the Kwoen project and other projects related to it may be in question.

Decision: As of 31 December 2001, this review had yet to be completed.

8. *BC Gas Utility Ltd. (BC Gas) - Westcoast Energy Inc. (Westcoast)*

Review by NEB

On 8 May 2001, BC Gas applied to the Board for: (i) a review and variance of the Board's Decision and Order TG-2-99 issued following the RH-2-98 proceeding; and, (ii) an order establishing the terms and conditions under which Westcoast must transport natural gas from Kingsvale and Hope to Huntingdon, British Columbia.

In the RH-2-98 Decision, the Board approved a request by BC Gas for a receipt point on Westcoast's pipeline at Kingsvale and for Westcoast to receive, transport and deliver any gas delivered at Kingsvale to the Huntingdon Delivery Area. The Board also decided that the appropriate toll for firm service from Kingsvale to Huntingdon would be Westcoast's Zone 4 toll to Huntingdon.

In June 2001, the Board, following the review of submissions from interested parties, found that, on balance, the changed circumstances and new facts identified by BC Gas supported its request for review of the RH-2-98 Decision and set the application down for public hearing.

Decision: On 1 November 2001, the Board issued its decision and concluded that:

- if Westcoast expands its system between Kingsvale and Huntingdon to provide service to BC Gas between these two points, a toll of 12 cents per thousand cubic feet (¢/Mcf) will apply
- until the Westcoast system is expanded, the toll for firm deliveries from Kingsvale to Huntingdon will remain the full Zone 4 toll
- it would not rule at this time on what could be an acceptable toll for firm service from Hope to Huntingdon
- it would deny requests to amend the current interruptible toll design and other aspects of the firm toll design for Zone 4 associated with removing Kingsvale from the Inland Delivery Area

9. **Webb Real Estate (Webb) - Maritimes and Northeast Pipelines Management Ltd. (M&NP)**

Review by NEB

On 27 April 2001 Webb asked the Board to review an order granted under s. 58 of the *National Energy Board Act* which effectively approved the construction of certain M&NP facilities and a right of entry order required for that construction.

Webb argued that the Board erred in not granting Webb a sufficient extension for filing submissions, that the Board showed apprehension of bias in granting an insufficient extension and that the Board breached the rules of natural justice in making a decision without giving Webb a reasonable opportunity to make further submissions.

Decision: On 25 May 2001 the Board determined that a *prima facie* case for review had not been established for either order and dismissed the application for review.

SUPPLEMENT V

Co-operation with Other Organizations

The National Energy Board co-operates with other agencies to reduce regulatory overlap and provide more efficient regulatory services.

Alberta Energy and Utilities Board (EUB)

The NEB has an MOU with the EUB on Pipeline Incident Response. The agreement provides for mutual assistance and a faster and more effective response by both boards to pipeline incidents in Alberta.

The NEB and the EUB maintained their commitment to using the common reserves database for oil and gas reserves in Alberta. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for co-operation.

British Columbia Ministry of Energy and Mines (BCMÉM)

The NEB and BCMÉM maintained their commitment to using a common reserves database for oil and gas reserves in British Columbia. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for co-operation.

BCMÉM is also a member of the Canadian Coalbed Methane Forum along with the Geological Survey of Canada and the NEB.

Canada-Newfoundland Offshore Petroleum Board (CNOPB) and Canada-Nova Scotia Offshore Petroleum Board (CNSOPB)

The Chairs of the NEB, the CNOPB and the CNSOPB, together with executives from the Newfoundland and Labrador and Nova Scotia Departments of Energy and NRCan, form the Oil and Gas Administrators Advisory Council (OGAAC). The OGAAC membership discuss and decide on horizontal issues affecting their respective organizations to ensure convergence and collaboration on oil and gas exploration and production issues across Canada. The NEB, CNOPB and CNSOPB staff also work together to review, update and amend regulations and guidelines affecting oil and gas activities on Accord Lands.

The NEB staff also provide technical expertise to NRCan, CNOPB and CNSOPB on technical matters of mutual interest, such as reservoir assessment, occupational safety and health, diving, drilling and production activities.

Canadian Association of Members of Public Utility Tribunals (CAMPUT)

CAMPUT is a non-profit organization of federal, provincial and territorial boards and commissions which are responsible for the regulation of the electric, water, gas and pipeline utilities in Canada. Members and staff sit on the executive committee of the association, promoting the education and training of members and staff of public utility tribunals. During 2001, Board members and staff attended the Annual CAMPUT conference.

Canadian Coalbed Methane Forum (CCMF)

The NEB is active as a member of the CCMF to stay aware of developments of this potential resource for future gas supply. The CCMF is made up of representatives from industry and provincial and federal government departments and agencies.

Canadian Environmental Assessment Agency (CEAA)

NEB staff are actively engaged with CEAA matters, participating in CEAA's Senior Management Committee and acting as an observer on the Regulatory Advisory Committee. This involvement ensures effective co-ordination of regulatory responsibilities relating to environmental assessments.

Comisión Reguladora de Energía (CRE) of Mexico

Staffs at the NEB and CRE maintain an ongoing informal relationship, sharing regulatory experiences and information on North American energy markets. This relationship, which includes inter-agency staff visits, is expected to result in a written cooperation arrangement in the next year.

Co-operation on the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories

Through 2001, the NEB worked in collaboration with the boards and agencies with responsibility for environmental impact assessment and regulatory review of a major natural gas pipeline through the Northwest Territories to develop a Draft Co-operation Plan (DCP). The DCP is a planning tool that has been devised to take advantage of opportunities for co-ordination and co-operation of review processes within existing legislation. It provides a framework for an efficient, timely and flexible process that enhances public and northern participation. The plan also provides for consolidated information requirements, a joint technical support team, and a joint public registry to reduce duplication. The parties to the Plan include: the Mackenzie Valley Land and Water Board, The Sahtu and Gwich'in Land and Water Boards, the NWT Water Board, the Mackenzie Valley Environmental Impact Review Board, the Environmental Impact Screening Committee and the Environmental Impact Review Board for the Inuvialuit Settlement Region, the Inuvialuit Game Council, the Inuvialuit Land Administration, the Canadian Environmental Assessment Agency, the Department of Indian Affairs and Northern Development, and observers from the Deh Cho First Nation, the Government of the NWT and the Government of Yukon.

Human Resources Development Canada (HRDC)

The NEB has an MOU with HRDC to administer the *Canada Labour Code* for NEB-regulated facilities and activities and to co-ordinate these safety responsibilities under the COGO Act and the NEB Act.

Mackenzie Valley Environmental Impact Review Board (MVEIRB)

In late 2000, the NEB and the MVEIRB signed a joint Memorandum of Understanding to establish a co-operative framework for environmental impact assessment in the Mackenzie Valley. In the case of transboundary pipeline project, the NEB has responsibilities under both the *Mackenzie Valley Resource Management Act* and the *Canadian Environmental Assessment Act*. This MOU facilitates the co-operation of two boards to reduce duplication and increase effectiveness of the environmental review process.

National Association of Regulatory Utility Commissioners (NARUC)

Board members regularly participate in meetings of the U.S. NARUC, particularly with respect to developments in U.S. gas markets that may affect cross-border trade in natural gas.

Natural Resources Canada (NRCan)

In 1996, the NEB signed a Memorandum of Understanding (MOU) with NRCan to reduce duplication and increase co-operation between the agencies. This MOU covers items such as data collection, the enhancement of energy models and special studies. The MOU was renewed in January 2000.

Northern Pipeline Agency (NPA)

The NEB provides technical and administrative assistance to the NPA, which, under the *Northern Pipeline Act*, has primary responsibility for overseeing the planning and construction of the Canadian portion of the proposed Alaska Natural Gas Transportation System by Foothills Pipe Lines Ltd. Mr. Kenneth W. Vollman, Chairman of the NEB, serves as Administrator and Designated Officer of the NPA.

Pipeline Technical Regulatory Authorities of Canada Council (PTRACC)

The NEB chairs a staff committee of federal and provincial technical regulators. PTRACC meets regularly throughout the year to discuss pipeline safety and environmental initiatives.

Saskatchewan Department of Energy and Mines (SEM)

The NEB and the SEM have worked together on some resource issues, but a formal agreement has not been signed.

Transportation Safety Board of Canada (TSB)

While the NEB has exclusive responsibility for regulating the safety of oil and gas pipelines under federal jurisdiction, it shares the responsibility for investigating pipeline incidents with the TSB. The roles and responsibilities of each body with regard to pipeline accident investigations are outlined in a MOU between the two boards.

U.S. Federal Energy Regulatory Commission (FERC)

NEB and FERC executives maintain a regular dialogue on their respective regulatory experiences and exchange information available in the public domain in order to assist in the planning and management of the workload of the two organizations.

Yukon Territory Department of Economic Development (YDED)

The NEB continues to work with Yukon officials to facilitate the transfer of oil and gas regulatory responsibilities in accordance with the Yukon Accord Implementation Agreement. The Board provides expert technical advice to the YDED.

SUPPLEMENT VI

List of Appendices

The following Statistical Reports are published separately as Appendices to the Annual Report. Electronic copies can be found on the Board's Internet site and printed versions are available from the Publications Office call (403) 299-3562 or 1-800-899-1265, send a facsimile to (403) 292-5503 or visit the Board's Internet site (www.neb-one.gc.ca).

Appendix A

- A1 Crude Oil and Equivalent Supply and Disposition
- A2 Estimated Established Reserves of Crude Oil and Bitumen at 31 December 2000
- A3 Natural Gas Supply and Disposition
- A4 Estimated Established Reserves of Marketable Natural Gas at 31 December 2000
- A5 Natural Gas Liquids Supply and Disposition
- A6 Geophysical Activity
- A7 Exploration and Development Expenditures
- A8 Sales of Exploration Rights in Western Canada
- A9 Sales of Exploration Rights in Frontier Regions
- A10 Electricity Generation and Disposition

Appendix B

- B1 Certificates Issued During 2001 Approving Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length
- B2 Orders Issued During 2001 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length
- B3 Exports of Canadian Crude Oil and Equivalent - 2000 and 2001
- B4 Exports of Canadian Crude Oil and Equivalent - 1997 to 2001
- B5 Exports of Petroleum Products by Month - 2001
- B6 Exports of Petroleum Products by Company - 2000 and 2001

Appendix C

- C1 Certificates Issued During 2001 Approving the Construction of Gas Pipeline Facilities Exceeding 40 Kilometres in Length
- C2 Orders Issued During 2001 Approving the Construction of Gas Pipeline Facilities Not Exceeding 40 Kilometres in Length
- C3 Licences and Long-Term Orders to Export Natural Gas as at 31 December 2001
- C4 Licences and Long-Term Orders to Import Natural Gas as at 31 December 2001
- C5 Natural Gas Exports by Export Point - 1997 to 2001
- C6 Total Net Exports of Propane and Butanes - 2000 and 2001

Appendix D

- D1 Financial Information - Group 1 Oil Pipeline Companies with Multi-year Incentive Toll Agreements
- D2 Financial Information - Group 1 Oil Pipeline Companies with Tolls based on Cost of Service
- D3 Financial Information - Group 1 Gas Pipeline Companies

Appendix E

- E1 Certificates and Permits Issued During 2001 for International Power Lines
- E2 Amending Orders Issued During 2001 for International Power Lines
- E3 Revoking Orders Issued During 2001 for International Power Lines
- E4 Licences Issued During 2001 for the Export of Electricity
- E5 Permits and Orders Issued During 2001 for the Export of Electricity
- E6 Electricity Exports - 2001
- E7 Electricity Trade Between Canada and the United States - 2001 (by Province)
- E8 Electricity Trade between the United States and Canada - 2001 (by American Region/State)

SUPPLEMENT VII

NEB Organization



Senior Board Staff

Gaétan Caron
Judith Hanebury
Brenda Kenny
John McCarthy
Terrance Rochefort
Byron Goodall
Valerie Katarey
Michel Mantha
Bonnie Gray
Glenn Booth
Claudine Dutil-Berry
Vacant

Chief Operating Officer
General Counsel
Business Leader, Applications
Business Leader, Operations
Business Leader, Commodities
Business Leader, Information Management
Business Leader, Corporate Services
Secretary of the Board
Project Leader, Northern Preparedness
Professional Leader, Economics
Acting Professional Leader, Environment
Professional Leader, Engineering

Business Unit Responsibilities

The Board is structured into five business units, reflecting its major business processes: Applications, Operations, Commodities, Information Management and Corporate Services. In addition, the Executive Office includes three other units to provide specialized services: Legal Services, Professional Leadership and Regulatory Services.

Unit Descriptions

Applications

The Applications Business Unit is responsible for processing and assessing regulatory applications submitted under the *National Energy Board Act*. These fall primarily under Parts III and IV of the *National Energy Board Act*, corresponding to facilities and tolls and tariffs applications. The Applications Unit is also responsible for the financial surveillance and audits of NEB-regulated pipelines.

Operations

The Operations Business Unit is accountable for safety and environmental matters pertaining to facilities under the *National Energy Board Act*, the *Canada Oil and Gas Operations Act* and the *Canada Petroleum Resources Act*. It conducts safety and environmental inspections and audits, investigates accidents, monitors emergency response procedures, regulates the development of hydrocarbon resources in non-accord frontier lands, and develops regulations and guidelines with respect to the above.

Commodities

The Commodities Business Unit is responsible for energy industry and marketplace surveillance, including the outlook for the demand and supply of energy commodities in Canada and updating of guidelines and regulations relating to energy exports as prescribed by Part VI of the NEB Act. It is also responsible for processing applications for exports of natural gas, oil, natural gas liquids and electricity, imports of natural gas, and construction and operation of international power lines.

Information Management

The Information Management Business Unit is responsible for developing and implementing an information management strategy for the Board and disseminating the information required by internal and external stakeholders.

Corporate Services

The Corporate Services Business Unit is responsible for providing those services necessary to assist the Board in its management of human, material and financial resources.

Executive Office

The Executive Office is responsible for the Board's overall capability and readiness to meet strategic and operational requirements including legal advice for both regulatory and management purposes, maintaining and enhancing technical expertise within the Board in the economic, environmental and engineering fields, and hearing administration and regulatory support.

SUPPLEMENT VIII

List of Abbreviations

Alliance	Alliance Pipeline Ltd.
AVC	assurance of voluntary compliance
BC Gas	BC Gas Utility Ltd.
BC Hydro	British Columbia Hydro and Power Authority
Board or NEB	National Energy Board
CAPP	Canadian Association of Petroleum Producers
Cartier	Cartier Pipeline and Company, Limited Partnership
CEAA	Canadian Environmental Assessment Agency
COGO Act	<i>Canadian Oil and Gas Operations Act</i>
CSA	Canadian Standards Association
CSR	Comprehensive Study Report
EMA	Energy Market Assessment
Enbridge	Enbridge Pipelines Inc.
ERF	Electronic Regulatory Filing
ESIMS	Environment and Safety Information Management System
ESRF	Environmental Studies Research Funds
FAQ	frequently asked question
FERC	Federal Energy Regulatory Commission
GDP	Gross Domestic Product
GFR	<i>Guidelines for Filing Requirements</i>
GSX	Georgia Strait Crossing Pipeline Limited
IPL	international power line
Line 9	Enbridge's crude oil pipeline from Montreal to Sarnia
M&NP	Maritimes and Northeast Pipeline Management Ltd.
Manitoba Hydro	Manitoba Hydro-Electric Board
MOU	Memorandum of Understanding
NB Power	New Brunswick Power Corporation
NEB or Board	National Energy Board
NEB Act	<i>National Energy Board Act</i>
NGLs	natural gas liquids
NOVA	NOVA Gas Transmission Ltd.
OPEC	Organization of Petroleum Exporting Countries
OPR-99	<i>Onshore Pipeline Regulations, 1999</i>
PDF	Portable Document Format
Powerex	British Columbia Power Exchange Commission
RTO	regional transmission organization
SEMS	Safety and Environmental Management System
SGML	Standard Generalized Markup Language
Sumas	Sumas Energy 2 Inc.
TMPL	Trans Mountain Pipeline Company Ltd.
TransCanada	TransCanada PipeLines Limited
Vector	Vector Pipeline Ltd.
WCSB	Western Canada Sedimentary Basin
Westcoast	Westcoast Energy Inc.
WTI	West Texas Intermediate

METRIC CONVERSION TABLE

The International System of Units (SI) is the only system of units that is based on a single, coherent system of units. It is the only system of units that is based on a single, coherent system of units. It is the only system of units that is based on a single, coherent system of units.

The following conversion table is provided for the convenience of those who may be more comfortable with Imperial units.

Approximate Conversion Factor

metre	=	1.28 feet
kilometre	=	0.62 mile
hectare	=	2.47 acres
cubic metre of oil	=	6.3 barrels
cubic metre of natural gas	=	35.3 cubic feet
gigajoule	=	0.95 thousand cubic feet of natural gas at 1 000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
gigajoule	=	10^9 joules
petajoule	=	10^{15} joules
kilowatt hour	=	10^3 kilowatt hours
megawatt hour	=	10^6 kilowatt hours

Saskatoon
 Saskatchewan Power Corporation
 Sempra Energy Trading Corp.
 Sonat Power Marketing Inc.
 Sonat Power Marketing, L.P.
 Tractebel Energy Marketing Inc.
 TransAlta Energy Marketing Corp.
 TransCanada Energy Ltd.
 West Kootenay Power Ltd.
 WPS Canada Generation, Inc.

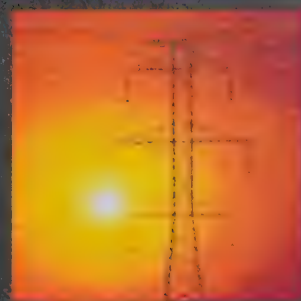
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14 March 2003

The Honourable Herb Dhaliwal, P.C., M.P.
Minister of Natural Resources Canada
580 Booth Street, 21st Floor
Ottawa, Ontario
K1A 0E4

Dear Minister:

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 2002, in accordance with the provisions of Section 133 of the *National Energy Board Act*, R.S.C. 1985, c. N-7.

Yours truly,



Kenneth W. Vollman
Chairman



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our purpose

We promote safety, environmental protection, and economic efficiency in the Canadian public interest while respecting individuals' rights and within the mandate set by Parliament in the regulation of pipelines, energy development and trade.

our vision

To be a respected leader in safety, environmental and economic regulation.

our goals

NEB-regulated facilities are safe and perceived to be safe.

NEB-regulated facilities are built and operated in a manner that protects the environment and respects individuals' rights.

Canadians derive the benefits of economic efficiency.

The NEB meets the evolving needs of the public to engage in NEB matters.

chairman's letter

The price volatility observed in natural gas markets in 2001, along with the serious difficulties experienced by North American energy trading companies, raised public concern about the functioning of energy markets. In response, the NEB monitored markets closely in 2002 and concluded that Canadians' energy needs were fully satisfied throughout the year at fair market prices. Importantly, the Board did not find any evidence of questionable energy trading practices in Canada.

In keeping with our monitoring activities, the Board released a report on the functioning of the Canadian natural gas market and another on the outlook for natural gas supply capability of the Western Canada Sedimentary Basin (WCSB). These reports indicate that it is likely that, even with high drilling levels, production of conventional natural gas supplies will remain flat or decline slightly over the next couple of years. The maturing of the WCSB is leading to a heightened level of interest in the development of other sources of gas supply, including coal bed methane and new basins in the Northwest Territories and offshore Nova Scotia.

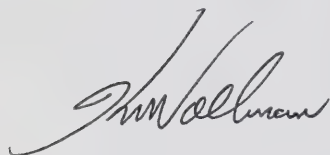
Development of resources in frontier areas requires companies to seek approvals from several jurisdictions and agencies with a variety of mandates. The NEB worked closely with 12 boards and agencies with jurisdiction in the North to establish the *Co-operation Plan for the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories*. The Board also partnered with the Canada-Nova Scotia Offshore Petroleum Board to arrange for a single-window review of the proposed Deep Panuke Offshore Gas Development project in the Scotian basin. The Board will work with all federal, provincial and regional agencies to continue to improve the effectiveness and efficiency of its regulatory approval processes.

The Board is committed to the concept of "smart regulation", which means dedicating its resources to issues that are in the public interest of Canadians, while streamlining regulatory processes. One example of smart regulation that the Board has pursued is the goal-oriented approach to regulation. The Board has also excluded an increased number of routine projects from its application process and is currently revising and clarifying the guidelines relied upon by companies in preparing applications to the Board.

During 2002, the Board continued to focus on outcomes related to its environmental regulation program. We are now able to rigorously assess the effectiveness of the environmental conditions we attach to facility approvals. In 2002, 94 percent of the conditions for which a result was available had attained their desired end result of contributing to the goal of environmental protection.

The Board has also worked to ensure that it meets the needs of the Canadian public to engage in NEB matters. In 2002, several new initiatives designed to facilitate the engagement of stakeholders in Board processes were implemented, including: extensive external consultations on the upcoming Supply and Demand Report; further understanding of effective Aboriginal Engagement; and the gradual implementation of an Appropriate Dispute Resolution program.

I believe that the Board achieved its goals in 2002: Canadian pipelines were constructed and operated safely and in a manner that protected the environment; energy markets worked fairly to the economic benefit of Canadians; the pipeline infrastructure met the needs of producers, shippers and consumers; and a large number of Canadians participated effectively in Board matters. It is with pride in the results that we have achieved and confidence that the Board will continue to meet its goals that I submit this report.

A handwritten signature in black ink, appearing to read "Ken Vollman", with a stylized, flowing script.

Kenneth W. Vollman

our role and responsibilities

The National Energy Board (NEB or Board) is an independent regulatory tribunal established in 1959. It reports to Parliament through the Minister of Natural Resources. The main functions of the NEB are established in the *National Energy Board Act* (NEB Act). These include the regulation of interprovincial and international natural gas, oil and commodity pipelines, international and designated interprovincial electric power lines, and energy exports. The Board has additional regulatory responsibilities under the *Canada Oil and Gas Operations Act* (COGO Act) and under certain provisions of the *Canada Petroleum Resources Act* (CPR Act) for oil and gas exploration and activities on frontier lands not otherwise regulated under joint federal/provincial accords. The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*.

The NEB's regulatory responsibilities for public safety and protection of the environment are set out in the NEB Act and the COGO Act. The NEB is required to meet the requirements of the *Canadian Environmental Assessment Act* (CEA Act) and the *Mackenzie Valley Resources Management Act*. In addition, Board inspectors are appointed Health and Safety officers by the Minister of Labour to administer Part II of the *Canada Labour Code* as it applies to facilities regulated by the Board.

The Board's mandate also includes the provision of expert technical advice to the Canada-Newfoundland Offshore Petroleum Board (C-NOPB), the Canada-Nova Scotia Offshore Petroleum Board (C-NSOPB), Natural Resources Canada (NRCan) and Indian and Northern Affairs Canada (INAC). The Board may, on its own initiative, hold inquiries and conduct studies on specific energy matters as well as prepare reports for Parliament, the federal government and the general public. The NEB Act requires that the Board keep under review matters relating to all aspects of energy supply, production, development and trade that fall within the jurisdiction of the federal government. In addition, the Board provides advice and carries out studies and reports at the request of the Minister of Natural Resources.

The Board is a court of record and has the powers of a superior court with regard to compelling attendance at hearings, the examination of witnesses under oath, the production and inspection of documents, and the enforcement of its orders. The NEB Act provides for up to nine permanent

The NEB's corporate purpose is to promote safety, environmental protection and economic efficiency in the Canadian public interest while respecting individuals' rights and within the mandate set by Parliament in the regulation of pipelines, energy development and trade.

The NEB's vision is to be a respected leader in safety, environmental and economic regulation.

1 The public interest is inclusive of all Canadians and refers to a balance of economic, environmental, and social interests that changes as society's values and preferences evolve over time. As a regulator, the Board must estimate the overall public good a project may create and its potential negative aspects, weigh its various impacts, and make a decision.



Board Members. Public hearings are typically conducted by three Members, who constitute a quorum of the Board, with one acting as Presiding Member. The Board's regulatory decisions and the reasons for them are issued as public documents.

Additional information on the background and operations of the NEB may be found at the Board's Internet site, www.neb-one.gc.ca.



operating context

The NEB's business is the provision of energy regulation, decisions and advice. Companies regulated by the Board create wealth for Canadians through the transport of oil, natural gas and natural gas liquids (NGLs), and through the export of hydrocarbons and electricity. As a regulatory agency, the Board's role is to help create a framework that allows these economic activities to occur when they are in the public interest. Through its corporate goals, the Board strives to ensure public safety, maximize economic benefits, protect the environment and respect the rights of those affected by energy facilities and activities under the Board's jurisdiction. As a regulator, the Board must estimate the overall public good a project may create and its potential negative aspects, weigh its various impacts and make a decision.

The Board is aware of the influence it has on the investment climate for energy companies. Industry desires clear regulatory processes with predictable timelines. At the same time, the public needs to know that pipelines and other regulated facilities found to be in the public interest are built and operated in a safe and environmentally responsible manner. The Board is committed to adjusting its regulatory approaches to meet the needs of Canadians.

Oil, natural gas and electricity are Canada's major energy commodities, and while convergence between energy forms is continuing, each commodity has its own trading characteristics. Oil is traded on an open world market; therefore, prices paid to producers and by consumers are tied to world oil market trends. Canadian natural gas trades in a highly integrated North American market, where developments in one geographic area inevitably affect the entire market. Finally, electric power markets still tend to be regional, although the restructuring of power markets in various jurisdictions in Canada and the United States is ongoing.

This report is written within the context of each of these energy commodities and the Board's role in the regulation of pipelines, energy development and trade.



ENERGY MARKETS

The year 2002 was marked by the return of relative stability in natural gas prices, heightened tension in world oil markets and increased interest in electricity exports.

Natural gas prices averaged \$3.70¹ per gigajoule during 2002, fluctuating between \$3.00 and \$4.00 for most of the year. On a net export basis, Canada exported about 56 percent of its natural gas production to the United States in 2002, and these exports make up an important component of U.S. supply. Canadian production from the Western Canada Sedimentary Basin

¹ Canadian currency is used unless otherwise specified.

(WCSB) and the Scotian Shelf accounts for nearly 25 percent of total North American supply. While Canada's supply basins are less explored than those in the United States, the increasing maturity of the WCSB was an issue of concern in 2002. Some three billion cubic feet per day of productive capacity must be added each year just to maintain current levels of production. This may in part explain the heightened level of interest in both the proposed Mackenzie Valley gas pipeline and exploration and development of the Canadian East Coast offshore area. There was also renewed interest in expanding the connection to international gas markets by importing liquefied natural gas, though import levels into North America remained limited. In addition, North American gas markets were affected by the collapse of energy marketing giant Enron, and by the ongoing investigations into alleged corporate misconduct at a number of other energy trading firms. The net result has been a loss of liquidity, as overall short-term trading has been sharply reduced.

The average world oil price, at US\$26 for West Texas Intermediate (WTI), was up only slightly compared with 2001. However, over the course of 2002, prices increased from the US\$20 level to US\$32, primarily due to international political tensions that threatened to disrupt global supplies of crude oil. Low inventory levels in the three OECD¹ markets also supported relatively high prices. Canadian oil producers benefited from high and stable prices with Canadian production of crude oil and equivalent establishing a record high in 2002. After declining for four consecutive quarters, the rate of growth in world oil demand rebounded strongly in the third quarter of 2002, with growth expected to continue during the winter. Canada's oil production and export levels continue to increase, with the United States importing most Canadian exports. In this regard, oil exports are closely tied to the demand characteristics of the U.S. market, particularly the U.S. Midwest region.

Since the early 1990s, major initiatives have been undertaken to restructure electricity markets in North America. The restructuring of power markets in various jurisdictions in Canada and the United States is ongoing, and although the degree of interconnection is increasing, power markets still tend to be regional. At the end of 2002, both Alberta and Ontario were offering wholesale and retail competition. As a result, about 50 percent of the Canadian population have wholesale and retail access to electricity. Nova Scotia, New Brunswick and British Columbia have all announced specific initiatives toward restructuring the electricity markets in their provinces.

The Board continues to participate in the "Trilateral Clearing House," an initiative of the Trilateral Electricity Group of the North American Energy Working Group (NAEWG). The goals of the NAEWG are to foster communication and co-operation among the governments and energy sectors in Canada, the United States and Mexico on energy-related matters of common interest and to enhance North American trade and interconnections consistent with the goal of sustainable development.

SMART REGULATION

Smart regulation was one of the key themes in the 2002 *Speech from the Throne*. Smart regulation creates a positive investment climate by creating a clear, predictable and efficient regulatory

1 Organization for Economic Co-operation and Development.

process. The Board realizes that companies need clear regulatory requirements and dependable timelines. The NEB has been taking concrete actions in this area by developing new approaches to how it regulates, while ensuring that all relevant public interests are considered.

The Board believes that the move from prescriptive to goal-oriented regulation is a key component of smart regulation and will continue to pursue efforts to implement the goal-oriented approach. In this approach, the regulations identify the goals that must be attained by the regulated companies, with the companies selecting the best methods to achieve the goals. The Board's first step towards goal-oriented regulation occurred when it issued the revised *Onshore Pipeline Regulations* in 1999. Since then, using the goal-oriented approach, the Board has proposed the *Processing Plant Regulations* (proceeding with promulgation), the *Damage Prevention Regulations* (currently under review), and revisions to the *Diving Regulations* (waiting for Offshore Board approvals).

The Board continuously reviews its processes for efficiency, focussing regulatory approval efforts where they can have the most impact and by streamlining processes wherever possible. In 2002, the Board issued a revised *Section 58 Streamlining Order*, which permits companies to undertake, without applying for Board approval, certain routine facilities projects. The revisions resulted in the exclusion of an increased number of routine projects from the Board's application process.

As incomplete applications are one of the major causes of unnecessarily long processing times, the Board embarked upon a review of its *Guidelines for Filing Requirements* (GFR) in 2002. The GFR identify the information that must be filed with applications to the Board. The first completed sections of the revised guidelines will be released in the spring of 2003, with the entire review scheduled for completion by the end of 2003.

In order to minimize duplication, the Board looks for ways to coordinate processes with other regulators and government departments. In 2002, the Board played a leadership role in discussions that resulted in a cooperation plan among 12 organizations for the review of a Mackenzie Valley Pipeline application. The Board also negotiated an agreement with the C-NSOPB for a one-window review of EnCana's Deep Panuke Offshore Gas Development project.

Further information on these initiatives may be found in the Economic Efficiency section of this report.

PUBLIC CONTEXT

In rendering its decisions, the Board strives to make decisions that are in the Canadian public interest. Board processes are designed to allow for interested parties to express their views.

It is important that all views are heard as the Board's regulatory decisions affect industry, energy consumers, landowners, Aboriginal peoples, and those who live in the vicinity of a pipeline, powerline or facility.



The Board engages other government agencies when applications involve multiple jurisdictions in order to minimize duplication, clarify processes and facilitate public participation. In 2002, the Board undertook several initiatives to enhance the public's understanding of its regulatory processes. One example is the Board's development of an Appropriate Dispute Resolution (ADR) program to allow greater flexibility in resolving issues either within or outside the traditional regulatory process. In another example, that builds on work that began in 2001, the Board, in consultation with several other regulatory authorities, completed the *Co-operation Plan for the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories* (June 2002). The NEB is committed to engaging the various stakeholder groups and to working in a collaborative manner with other regulatory agencies to ensure that energy projects only proceed once all of the relevant public interests are considered.

PIPELINE SECURITY

The NEB maintains regular communications with the major NEB-regulated pipeline companies regarding security of their operations and pipeline systems. The NEB found that companies increased the level of security at their facilities during 2002. In addition to an overall heightened level of awareness, companies have implemented several security loss-prevention initiatives. These include restricting access to sensitive areas, reviewing or re-establishing existing security procedures, performing security audits, and enhancing physical security. There was also a general trend for companies to focus on employee training, emphasizing security issues and enhanced liaison with first responders, government and industry associations. The NEB also communicated to regulated companies that security issues should be included as part of their emergency response and preparedness programs. In addition, the NEB maintains communications and working relationships with the following organizations on security issues: the Office of Critical Infrastructure Protection and Emergency Preparedness, the Alberta Energy and Utilities Board (EUB), the Royal Canadian Mounted Police, the Transportation Safety Board of Canada (TSB), the Canadian Association of Petroleum Producers (CAPP), the Canadian Energy Pipeline Association, and the U.S. Office of Pipeline Safety.

regulatory highlights

In 2002, the Board considered applications for new pipeline facilities, new international power lines, tolls and tariffs filings, requests for changes to short-term export orders and a request for review of a previous decision. The Board received more than 730 applications from regulated companies, an increase of 25 percent over the previous year. The majority of these applications did not require a public hearing and included requests for routine improvements to the operation of existing regulated facilities as well as requests for short-term export orders. Seven public hearings were held in 2002, with a total of 57 hearing days. In addition, the Board received 96 applications under the COGO Act related to exploration and production activity in frontier areas, compared with 63 in 2001. The Board also investigated 38 complaints from landowners, compared with 43 in 2001. Approvals granted under the NEB Act included:

- 3 Certificates of Public Convenience and Necessity;
- 178 orders and permits for the construction and operation of pipelines and power lines under Part III of the NEB Act;
- 15 orders related to pipeline tolls and tariffs under Part IV of the NEB Act; and
- 548 permits and orders to export natural gas, crude oil and electricity under Part VI of the NEB Act.

Appendices B, C and E contain complete lists of regulatory decisions issued in 2002.

PIPELINE FACILITIES

The majority of approvals for pipeline facilities granted by the Board were for routine improvements to existing regulated facilities. Although the NEB did not receive any applications for major increases in pipeline capacity out of Alberta, the Board saw a shift in applications for proposed natural gas facilities in northeastern British Columbia as well as the Maritime offshore area.

In March 2002, EnCana Corporation, formerly PanCanadian Energy Corporation, filed applications with the C-NSOPB and the NEB for its Deep Panuke Offshore Gas Development project. A memorandum of understanding between the NEB and the C-NSOPB was developed in order to co-ordinate the public review of the project, reduce duplication and facilitate public participation. The public hearing is scheduled to begin in the spring of 2003.

The Board received an application from Maritimes & Northeast Pipeline Ltd. (M&NP) to expand capacity of its system by constructing a meter station and two compressor stations in Nova Scotia and two compressor stations in New Brunswick. The project was approved in



November 2002. The approval will come into effect on the later of 31 July 2003 or when M&NP submits certain required filings, including the filing of a revised engineering/hydraulic design for the facilities should contract volumes be less than anticipated.

In November 2002, the Board approved an application by Westcoast Energy Inc. (Westcoast) to expand the Grizzly Raw Gas Transmission System and to construct the Weejay Lateral. The project will consist of 109.5 kilometres of 406 mm¹ pipeline and five kilometres of 273 mm pipeline. It will permit Westcoast to connect additional gas reserves in the Ojay/Weejay area of British Columbia and the Narraway area of Alberta for delivery and treatment at its Pine River gas plant.



In another Westcoast application, the Board approved the company's Kwoen facilities, which consist of a compressor unit, an acid gas stripper, and a ten kilometre re-injection pipeline connecting to a disposal well. These facilities, located in northeastern British Columbia, will

process part of the raw gas transported by the Grizzly Transmission System. In addition, the Board considered an application for an expansion to Westcoast's Southern Mainline natural gas pipeline system in British Columbia. The proposed facilities would consist of approximately 54.6 kilometres of 1067 mm natural gas pipeline in six loop segments along the existing mainline, and additional facilities at several compressor and meter stations. A decision on the proposed Southern Mainline project is expected in early 2003.

The Board continued work on the Georgia Strait Crossing Pipeline Project (GSX), which involves construction and operation of the Canadian portion of a proposed pipeline that would transport natural gas from Sumas, Washington to Vancouver Island. The Joint Review Panel considering the application conducted a public hearing on a motion regarding the environmental effects of the project. A pre-hearing conference was also held in order to discuss the technical and scientific issues related to the marine portion of the project. The public hearing on GSX is scheduled to begin in February 2003.

TOLLS AND TARIFFS MATTERS

With respect to tolling matters, there was one public hearing and a technical conference in 2002, both of which dealt with applications from TransCanada PipeLines Limited (TransCanada).

In February 2002, the Board convened a public hearing on all matters related to TransCanada's cost of capital and establishing a fair return for the years 2001 and 2002. In its decision, the Board denied TransCanada's application to establish the company's fair return by using a new approach, after tax weighted average cost of capital, and affirmed the use of the formula established in the multi-pipeline cost of capital proceeding (RH-2-94). However, the Board did approve an increase in the equity component of TransCanada's capital structure. In late 2002, TransCanada applied for a review and variance of this decision.

¹ The Board uses the International System of Units. A metric conversion table is provided at the end of this report.

In an attempt to resolve concerns expressed by several parties, the Board held a technical conference in early 2002 to deal with matters related to an application by TransCanada for the deactivation of certain compressors. Subsequent to the conference, the Board issued guidance as to the appropriate accounting treatment for the units that were to be held for possible reuse. The technical conference was successful in resolving the immediate concerns of parties as well as providing a framework for resolving outstanding issues.

In November 2002, TransCanada applied for an order approving Interim Tolls for service on its Mainline effective 1 January 2003. Prior to making a decision, the Board sought comments from interested persons on the appropriateness of the level of the proposed Interim Tolls. The Board approved the application for Interim Tolls in December 2002.

The NEB also received an application from TransCanada for approval of tolls that it may charge for transportation services on its Mainline for the year 2003. The Board will hold a public hearing in February 2003 on this application.

NATURAL GAS EXPORTS

In an application to the Board, the Province of New Brunswick requested that the Board hold a hearing to establish a set of rules that would apply when considering applications for short-term export orders for incremental supplies of Scotian offshore gas. The province was concerned that Maritime gas buyers had difficulty accessing Scotian offshore gas due to tightness of supply. In September 2002, after a public hearing on the matter, the Board denied the application, deciding that it would be inappropriate to implement new procedures that would unduly interfere with the normal operation of the market. In reaching this conclusion, the Board noted that no direct evidence was produced establishing that Maritime gas buyers had not had access to Scotian offshore gas supplies on terms and conditions similar to those offered to export customers. However, recognizing that there are a number of unique characteristics of the Maritime gas market, the Board decided that it must enhance its monitoring efforts. In December 2002, the Board began consultations with key players in the Maritime natural gas market to gather information for its first public report on the functioning of that market.

POWER LINE FACILITIES

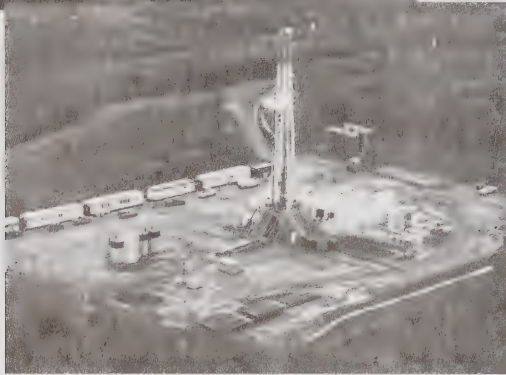
In 2002, the Board was particularly active assessing applications for power line facilities as interest in strengthening links in the North American electric power grid continued.

In March 2002, the Board approved an application by the Manitoba Hydro Electric Board to construct and operate an international power line (IPL) between Glenboro station in Southern Manitoba and the international boundary near Killarney, Manitoba. In June 2002, the Board approved an application by Cedars Rapids Transmission Co. to reconstruct an IPL from Les Cèdres, Quebec to Cornwall, Ontario.

In April 2002, Hydro One Delivery Services, Inc. filed a preliminary information package with the Board regarding the proposed Lake Erie Link, an IPL between Canada and the United States across Lake Erie. The Board had invited public comments on a proposed scope of the environmental assessment. However, in October 2002, Hydro One requested postponement until further notice. The Board will take no further action on the project at this time.

In an application dated 31 May 2001 and later revised on 26 July 2002, New Brunswick Power Corporation (NB Power) applied to construct and operate a 345 kilovolt IPL approximately 95 kilometres in length. It would run west from the Point Lepreau Peninsula to the international boundary near Woodland, Maine. The application is expected to go to public hearing in 2003.

In June, Sumas Energy 2 Inc. (SE2) requested the Board to recommence assessment of a proposed 230 kilovolt IPL originating from Sumas, Washington and crossing the international boundary near Abbotsford, British Columbia. In October 2002, the Board held a public hearing in Abbotsford to consider motions concerning the application. The Board decided that it would consider evidence regarding the environmental effects in Canada of SE2's proposed power plant to be located at Sumas. A public hearing on SE2's application is scheduled for April 2003.



ACTIVITY IN FRONTIER REGIONS

Exploration activity was primarily focused in the southern Northwest Territories (NWT) and the Mackenzie Delta/Beaufort Sea area. Geophysical and drilling programs conducted in 2002 continued at the same level as the previous year. Activity in the southern NWT near the hamlet of Fort Liard and the Central Mackenzie Valley focused on geophysical programs and exploration well drilling. In addition, offshore seismic programs were conducted in the Beaufort Sea, Davis Strait and Gulf of St. Lawrence.

In 2002, the Board continued assessing applications for frontier projects. Activity was related to the tie-in of the discovered gas

reserves in the southern NWT. One new gas field, Cameron Hills, was brought on production and tied into the Cameron Hills pipeline system that serves North American markets. In addition to Cameron Hills, production operations continued from three producing gas fields near Fort Liard, the Norman Wells oil field and the Ikhil gas field, the latter supplying gas to the town of Inuvik. Also in 2002, abandonment commenced on the production facilities at the Pointed Mountain Gas Field near Fort Liard, which produced gas from 1972 to 2001. Industry groups continued feasibility and engineering studies on major natural gas pipelines from the Mackenzie Delta and Alaska. To date, no applications for pipeline construction have been made.

REGULATORY CO-OPERATION IN THE NORTH

In June 2002, the chairs of boards and agencies with regulatory and environmental assessment responsibilities in the Mackenzie Valley (12 organizations in total including the NEB) jointly released the *Co-operation Plan for the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline through the Northwest Territories* (June 2002). The plan had been released for public comment earlier in the year, and then revised based on input received from a broad cross-section of interested parties.

The plan sets out a co-ordinated process for review of a major pipeline application in a manner that reduces duplication, provides certainty and timeliness, and enhances public participation. Through the remainder of 2002, the boards and agencies worked to implement the Co-operation Plan through development of specific bilateral agreements, a project secretariat, shared technical support, a joint public registry, and a plan for public involvement. The process described in the Co-operation Plan will begin following submission of a preliminary information package by a proponent and applications to the Mackenzie Valley Land and Water Board.

Through the Regulatory Roadmaps Project, the NEB participated in the development of several new guides for the regulatory process of oil and gas exploration, development and production activities in frontier areas. Three guides were released in 2002:

- *Guide to Oil and Gas Approvals in the Gwich'in Settlement Area, NWT;*
- *Guide to Oil and Gas Approvals in the Sahtu Settlement Area, NWT; and*
- *Guide to Oil and Gas Approvals in the Beaufort Sea, NWT.*

There are now seven guides completed for the Regulatory Roadmaps Project, including two additional NWT guides and two Atlantic Canada offshore guides. They may be found electronically at www.oilandgasguides.com.

The NEB is also participating in the multi-stakeholder development of the Mackenzie Valley Environmental Impact Review Board's *Guidelines for Environmental Impact Assessment in the Mackenzie Valley, NWT*. Completion of these guidelines is expected in 2003.

energy overview

As part of its monitoring function, the Board keeps Canadians informed about trends and issues in energy markets on an ongoing basis. In addition to fulfilling its statutory reporting requirements with respect to energy exports and imports, the NEB also prepares reports on current and future energy market developments in Canada. In 2002, the Board issued two Energy Market Assessment (EMA) reports on natural gas markets and the natural gas supply capability of the WCSB. The Board has also been preparing a long-term study of Canadian energy supply and demand, which is scheduled for release in the spring of 2003. The Supply and Demand Report presents analyses of long-term trends in energy markets in Canada and is updated every three to four years.

This overview provides a summary of Canadian energy supply, consumption, production, prices, and trade over the past five years. The Appendices, prepared as a companion document to the Annual Report, provide details on supply and disposition of crude oil, natural gas and electricity, as well as on industry activity, facility certificates, orders and licences for exports and pipeline financial information (see the List of Appendices in Supplement VI).

ENERGY AND THE CANADIAN ECONOMY

In 2002, the energy industry accounted for about six percent of Canada's Gross Domestic Product and employed just under 300 000 persons or about 1.8 percent of the Canadian labour force. Energy export revenue accounted for an estimated 12 percent of all Canadian exports, down from 15 percent in 2001. This decline was due to decreased commodity prices and export volumes.

Economic growth in both Canada and the United States during 2002 outpaced 2001 levels, at 3.4 percent versus 1.5 percent for Canada, and 2.7 percent versus 1.0 percent for the United

States. Total Canadian energy production increased 1.9 percent in 2002 compared with 1.6 percent in 2001, supported by higher economic growth in North America (Table 1). During the 1998-2002 period, total Canadian energy production increased on average by 1.4 percent per year, reflecting the pace of growth in the North American economy as a whole.

Petroleum and natural gas together accounted for approximately 75 percent of the total Canadian energy production, about the same as in 2001. Higher production of natural gas and petroleum including crude oil and NGLs are mainly the result of higher economic growth, relatively moderate changes in oil and gas prices

TABLE 1
Domestic Energy Production by Energy Source
(petajoules)

	1998	1999	2000	2001	2002(a)
Petroleum	5 627	5 420	5 671	5 727	5 830
Natural Gas	6 125	6 189	6 377	6 636	6 755
Hydroelectricity	1 183	1 232	1 278	1 182	1 263
Nuclear	780	802	795	837	808
Coal	1 651	1 589	1 516	1 502	1 529
Renewable and Other	571	609	615	621	632
Total	15 937	15 841	16 252	16 505	16 817

(a) Estimates.

Note: Includes energy exports.

Petroleum includes crude oil and equivalent +LPG.

Source: Statistics Canada - NEB

and expansion of facilities. Hydroelectric generation and coal production increased in 2002 from 2001 levels. Nuclear generation in 2002 declined slightly from 2001 levels.

Preliminary estimates indicate that domestic Canadian energy consumption increased by 2.5 percent in 2002, after a modest decline in 2001 (Table 2), consistent with growth in the Canadian economy and relatively moderate changes in energy prices.

On average, the Canadian economy has been using energy more efficiently. Domestic energy consumption per unit of Gross Domestic Product (i.e. energy intensity of production of goods and services) continued to decline. During the 1998-2002 period, Canadian energy consumption increased on average by 1.7 percent per year, compared with an average growth rate of 3.1 percent per year for the Canadian economy as a whole.

In 2002, the gross export earnings from natural gas, petroleum, electricity and coal were approximately \$43 billion, about 18 percent lower relative to 2001, mainly due to lower natural gas and NGL export prices. In 2002, Canada's energy trade surplus (value of energy exports minus value of energy imports) was about \$26 billion, down from \$33 billion in 2001.

CRUDE OIL AND NATURAL GAS LIQUIDS

International Markets

After declining to the US\$20 level at the end of 2001, world oil prices rose during 2002 under the influence of rising geopolitical tensions that threatened to disrupt global supplies of crude. Fears that the United States would invade Iraq were eased somewhat when Iraq complied with a United Nations resolution to allow weapons inspectors into the country. In December, however, tensions escalated following mounting doubts whether Iraq would comply fully with the United Nations resolution. Also, a general strike that was called in Venezuela in early December, and that was still ongoing at year-end, severely reduced its oil exports. The price of WTI ended the year at about US\$32, and averaged US\$26 for the year.

TABLE 2
Domestic Energy Consumption^(a)

	1998	1999	2000	2001	2002
Space Heating	1 868	1 936	2 040	1 890	2 001
Transportation	2 257	2 307	2 280	2 256	2 271
Other Uses	3 403	3 516	3 726	3 425	3 552
Non-Energy ^(d)	812	829	789	856	866
Electricity Generation ^(e)	2 185	2 225	2 186	2 531	2 552
Total	10 525	10 813	11 021	10 958	11 242

(a) Includes consumption of imported energy

(b) Estimates.

(c) Includes energy used for space uses in the industrial sector

(d) Includes energy used for petrochemical feedstocks, asphalt

(e) Includes producer consumption and requirements.

Source: Statistics Canada, NLE

FIGURE 1
Net Energy Export Revenues

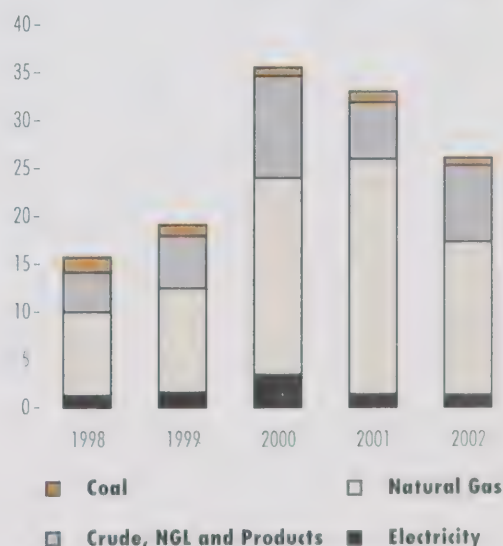
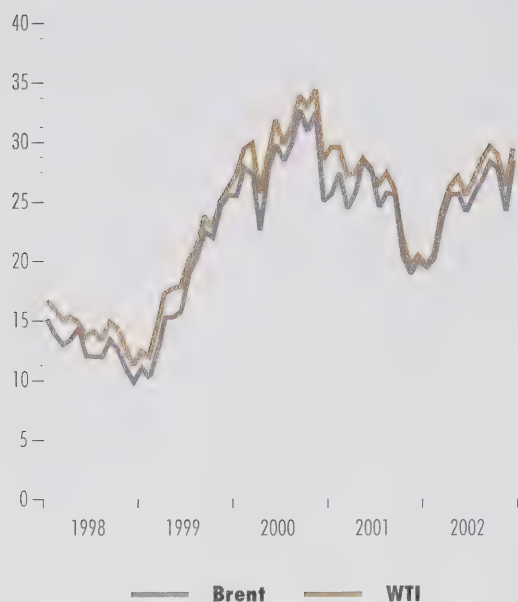


FIGURE 2
WTI and Brent Oil Price
(US\$ per barrel)



Effective 1 January 2002, the Organization of Petroleum Exporting Countries (OPEC) reduced its production quotas to 3.4 million cubic metres per day, the lowest level in ten years. These quotas remained in place until late in the year. The market did, however, receive additional supply from OPEC as a result of its members producing above quota during the fourth quarter, at times by up to 476 000 cubic metres per day. At its meeting in December 2002, OPEC decided to increase its quotas by 206 000 cubic metres per day effective 1 January 2003 and to adhere to the new output levels.

Production and Reserves Replacement

Canadian production of crude oil and equivalent again established a record in 2002, with production estimated at an average of 370 400 cubic metres per day, up by six percent from 2001 levels. This growth reflects increases in synthetic and bitumen production from Western Canada and an increase in

conventional light crude oil production from Eastern Canada (Table 3).

Production in offshore Newfoundland and Labrador nearly doubled in 2002, to 45 000 cubic metres per day, with the start-up of the Terra Nova field complementing the ongoing operations at Hibernia, where production increased by 18 percent over the previous year. In Western Canada, crude oil and equivalent supply increased by about 6.8 percent in 2002.

Conventional light crude oil production declined by 5.2 percent, continuing a long-term trend reflecting the natural decline of the reservoirs. Conventional heavy crude oil production decreased by three percent, reflecting some market difficulties in 2002.

The ongoing development of Canada's oil sands resources resulted in production increases, with synthetic crude oil up by 24.5 percent and in situ bitumen up by 1.3 percent over last year.

While remaining established reserves are reduced by production each year, new discoveries, extensions to existing pools and revisions to reserves estimates in existing pools usually add to reserves. From 1997 to 2001, on a

TABLE 3
Canadian Production of Crude Oil and Natural Gas Liquids
(thousand cubic metres per day)

	1998	1999	2000	2001	2002 ^(a)
Conventional Light (East)	13.5	17.5	23.6	24.3	45.8
Conventional Light (West)	126.9	113.1	108.3	103.9	96.5
Synthetic	48.2	51.5	50.1	54.7	68.1
Pentanes Plus	27.5	27.2	27.3	25.9	24.5
Total Light	216.1	209.3	209.3	208.8	234.9
Conventional Heavy	86.5	83.0	89.0	90.9	87.8
Bitumen	45.7	42.1	44.4	47.8	47.6
Total Heavy	132.2	125.1	133.4	138.7	135.4
Total Crude Oil and Equivalent	348.3	334.4	342.7	347.5	370.4
Natural Gas Liquids	96.3	101.2	99.8	94.2	94.7

[a] Estimates

cumulative basis, additions to established reserves of conventional light and heavy crude oil replaced 97 percent of production (Table 4). Declining WCSB reserves are nearly offset by reserves additions from the East Coast offshore.

The NEB's estimate of total Canadian remaining conventional crude oil and crude bitumen reserves at year-end 2001 (the last year for which data is available) is 28.5 billion cubic metres and is essentially unchanged from the previous year (Table 5). This means that reserves additions fully offset production for the year. It is noteworthy that the remaining reserves of crude bitumen, at 27.8 billion cubic metres, are sufficient to support in situ bitumen and oil sands mining production at current levels for about 700 years.

Estimates of remaining conventional crude oil reserves in Canada decreased by 2.9 percent to 680 million cubic metres in 2001, as production outpaced reserves additions. There were no changes to the initial reserves of crude bitumen in 2001; thus, remaining reserves decreased by an amount equivalent to bitumen production volumes.

Upstream Activity

Following a record year in 2001, all indicators of upstream activity were down in 2002, in response to generally lower commodity prices at the start of the year. Some 14 600 wells were drilled in 2002, down from 17 200 wells the previous year. The focus of drilling remained on natural gas, with gas well completions making up 63 percent of all wells completed. In 2002, oil well completions were 20 percent lower than in 2001, in spite of oil drilling levels increasing as prices rose through the year.

Competition for land softened in 2002, with revenue from land sale bonuses collected by the four western Canadian provinces decreasing to \$0.9 billion, down by 44 percent. The average price per hectare also weakened, at \$209 versus \$307 the year previous. Interest in frontier land acquisition was muted, with only two

TABLE 4
Conventional Crude Oil Reserves,
Additions and Production – 1997-2001

	1997	1998	1999	2000	2001	Total
Additions ^a	86	68	129	78	35	396
Production	81	87	78	79	84	409
Total Remaining Reserves	666	650	702	700	680	

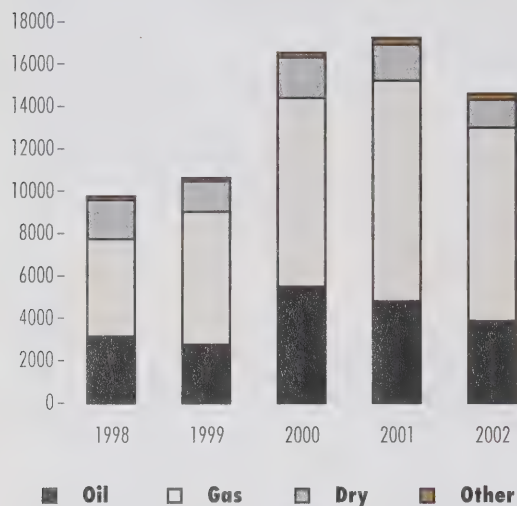
(a) Hibernia production started in 1997; Terra Nova reserves added in 1998.

TABLE 5
Estimates of Established Reserves of Crude Oil and Bitumen at
31 December 2001

Conventional Crude Oil	Initial	Remaining
British Columbia ^{a1}	123.0	25.5
Alberta ^{a2}	2 583.0	278.4
Saskatchewan ^{a3}	754.0	182.0
Manitoba ^{a4}	37.4	3.8
Ontario ^{a5}	14.4	1.9
NWT and Yukon:		
Arctic Island and Eastern Arctic Offshore ^{a6}	0.5	0.0
Mainland Territories – Norman Wells	43.0	10.4
Nova Scotia ^{a7} – Cohasset and Panuke	7.0	0.0
Newfoundland ^{a8} – Hibernia and Terra Nova	205.1	178.3
Total	3 767.4	680.3
Crude Bitumen		
Oil Sands – Upgraded Crude ^{a9}	5 590.0	5 195.0
Oil Sands – Bitumen ^{a9}	22 740.0	22 575.0
Total	28 330.0	27 770.0
Total Conventional and Bitumen	32 097.4	28 450.3

a1) British Columbia Ministry of Energy & Mines and NEB.com
a2) Alberta Energy & Utilities Board and NEB
a3) NEB estimate for 31 December 2001
a4) NEB estimate for 31 December 2001
a5) NEB estimate for 31 December 2001
a6) NEB estimate for 31 December 2001
a7) NEB estimate for 31 December 2001
a8) NEB estimate for 31 December 2001
a9) NEB estimate for 31 December 2001

FIGURE 3
Number of Wells Drilled

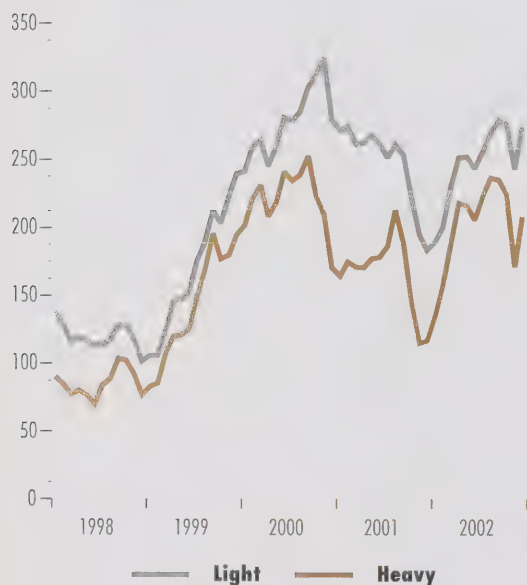


Crude Oil Exports and Imports

Total crude oil exports, including pentanes plus and upgraded bitumen (synthetic crude), are estimated at 227 800 cubic metres per day, an increase of 7 000 cubic metres per day over 2001. The 2002 total consisted of 38 percent light crude oil and equivalent and 62 percent blended heavy crude oil.

FIGURE 4
Light and Heavy Crude Oil Export Prices

(\$ per cubic metre)



1 The price difference between Edmonton Par Light and Hardisty Heavy crude oils.

licences issued covering 20 000 hectares in the Mackenzie Delta region.

Seismic survey activity was reduced in 2002, with the number of active crews down 50 percent over the previous year. This level of activity is well below the five-year average. Seismic activity in western Canada was focused in the Southeast, Foothills, and Northwest regions of Alberta as well as in the Northeast region of British Columbia.

Expenditures of \$17 billion for exploration and development of Canadian conventional and frontier areas (excluding oil sands) were made in 2002, down 20 percent from the previous year. Exploration spending continues to be about one-third of the total oil and gas exploration and development expenditure in Canada.

The estimated value of crude oil exports in 2002 is \$17.6 billion, compared with \$15.7 billion in 2001. Revenues rose as a result of increased export volumes and higher crude oil prices in the second half of the year. In 2002, the estimated average light and heavy crude oil export prices were \$37 and \$32 per barrel respectively, compared with \$39 and \$26 per barrel in 2001.

The light/heavy differential¹ narrowed in 2002 to an average of about \$9 per barrel compared with nearly \$12 per barrel in 2001. With the lower price situation at the end of 2001, heavy crude oil producers shut-in approximately 2 000 cubic metres per day until March 2002. This helped to increase the price of heavy crude oil relative to light crude oil.

The most significant market for western Canadian crude oil is the U.S. Midwest region, followed by

Montana and southern Colorado, Wyoming and Utah. The export market for eastern Canadian offshore production has primarily been the U.S. East Coast. However, as Terra Nova began production in 2002, a new market, the U.S. Gulf Coast, opened up allowing for the penetration of incremental volumes of Canadian offshore crude oil.

In 2002, crude oil imports were 140 800 cubic metres per day and represented 46 percent of total refinery feedstock requirements in Canada.

Crude oil requirements for the Atlantic region and Quebec were made up of imports as well as increasing volumes of East Coast domestic production. Ontario refiners received about 29 percent of their feedstock requirements from foreign sources, down from 44 percent in 2001. At times during 2002, the price of North Sea Brent crude relative to WTI was high, making it uneconomical to import Brent crude.

Although the Board does not regulate imports, it does have a monitoring role. Crude oil is imported into Canada from a variety of sources, with the most prominent being the North Sea (Norway & UK) at 52 percent, the Middle East at 16 percent, and Latin America at 10 percent of imports.



Oil Refining

Canadian refining capacity in 2002 was 322 000 cubic metres per day, which remained unchanged from 2001 capacity. In 2002, the demand for petroleum products in Canada averaged 256 000 cubic metres per day, a seven percent decrease from 2001. Refinery production rose marginally to 319 000 cubic metres per day. Refinery receipts of domestic crude oil averaged 147 200 cubic metres per day, an increase of eight percent from 2001. Commercial inventories of petroleum products in Canada were marginally higher than in the previous year.

Main Petroleum Products Exports and Imports

Historically, Canada has been a net exporter of main petroleum products including motor gasoline and middle distillates. For 2002, exports of main petroleum products and partially processed oil are estimated at 53 530 cubic metres per day, a less than one percent increase from 2001. This marginal increase in exports was a result of warmer weather and weaker industrial activity in the U.S. Northeast, which led to reduced distillate demand in that market.

The estimated revenue from main petroleum product exports, including partially processed oil, was \$4.4 billion in 2002, down from \$4.5 billion in 2001. The decrease was a result of lower gasoline prices, an unusually warm winter and continued weakness in the U.S. economy. The decline in the middle distillate volumes was, in part, due to the lingering effects of September 11, in particular, the continuing decline in jet kerosene fuel demand. This revenue excludes product exports from crude oil processing agreements for which prices are not assigned.

FIGURE 5
Crude Oil and Equivalent Supply and Disposition
 (thousand cubic metres per day)



The United States continued to be the largest buyer of Canadian produced petroleum products, accounting for approximately 95 percent of total exports. Exports were also made to Europe and small volumes to Mexico. The U.S. East Coast continued to be the largest market, followed by the Midwest and the U.S. West Coast.

As of July 1, 2002, the federal government's *Sulphur in Gasoline Regulations, 1999*, limit the sulphur in gasoline to an average of 150 parts per million (ppm). After 1 January 2005, all gasoline sold in Canada must average 30 ppm or less. These regulations coincide with the new vehicle emission control system (known as Tier 2) being phased in from 2004 to 2009, which requires low sulphur gasoline in order to operate efficiently. Canada has aligned itself with the United States to regulate sulphur in gasoline. However, the United States has chosen a more complex approach and is not expected to reach 30 ppm of sulphur in gasoline until at least 2006.

Imports of main petroleum products in 2002 are estimated at 17 000 cubic metres per day, a 20 percent decrease from 2001. The decline reflected lower imports of heavy fuel oil, diesel fuel and motor gasoline.

Oil Pipeline Capacity

In 2002, Enbridge Pipelines Inc. (Enbridge) operated at approximately 77 percent of its total capacity, compared with 76 percent in 2001, with the actual throughput averaging 209 000 cubic metres per day. In July, a break occurred on its heavy crude oil pipeline (Line 4) near Duluth, Minnesota. This caused apportionment of 11 percent on this line for the remainder of July and eight percent apportionment for the month of August. U.S. regulators placed a one-year pressure restriction on the line, which resulted in a decrease of heavy exports through Line 4. Average utilization in 2002 for Enbridge's Line 9 (crude oil pipeline from Montreal to Sarnia) was approximately 80 percent. This seven percent drop in Line 9 utilization compared with 2001 was due to lower amounts of North Sea imports into Ontario.

In 2002, the Trans Mountain Pipeline Company Ltd. (TMPL) system operated at 82 percent of its light crude oil capacity, compared with 85 percent in 2001. On this system, percent usage is rated in terms of light crude capacity, and has been decreasing due to the increasing volumes of heavy crude oil being transported. In 2002, Express Pipeline Ltd. increased throughput due to growth in demand in the markets it serves, operating at 97 percent of its capacity compared with 90 percent in 2001.



Natural Gas Liquids (excluding Pentanes Plus)

Natural gas liquids (NGLs) include ethane, propane, and butanes extracted from natural gas, as well as propane and butanes produced from crude oil refining. The Board estimates that, in 2002, approximately 80 percent of propane supply and 58 percent of butanes supply came from natural gas production, with the remainder from refinery processes, about the same as in the previous year. Production of NGLs from gas plants and refineries was 94 700 cubic metres per day in 2002, an increase of less than one percent compared with 2001.

Ethane production¹ was 41 200 cubic metres per day, propane production was 29 000 cubic metres per day and the production of butanes was 24 500 cubic metres per day in 2002. This represents an increase of eight percent for ethane production and a decrease of four percent and five percent for propane and butanes, respectively, compared with 2001 levels.

High natural gas prices relative to propane and butane experienced throughout most of 2002 may have had a negative impact on gas plant production. As a result, the decrease in propane and butane production may reflect producers' decisions to bypass extraction facilities, leaving liquids in the gas stream when processing margins were uneconomical for high cost producers. Ethane continued to be extracted by straddle plants and by gas plants with ethane extraction capability, in light of the increased ethylene production requirement at Joffre, Alberta since late 2000.

Exports of NGLs during 2002 are estimated at 31 100 cubic metres per day, an eight percent increase from 2001. Ethane exports in 2001 and 2002 were negligible due to the increase in ethane requirement at the Joffre petrochemical facilities. Propane exports were 24 600 cubic

¹ Includes miscible flood injection volumes for enhanced oil recovery projects.

metres per day and butanes exports were 6 500 cubic metres per day, reflecting an eight percent increase over 2001 for both commodities. The U.S. Midwest continued to be Canada's largest market for propane and butanes, accounting for 67 percent of the total export volume. Smaller amounts were delivered to the U.S. East Coast and U.S. West Coast. Although export volumes increased in 2002, the estimated value of NGL exports is \$2.0 billion, down 18 percent from 2001, a result of lower prices in 2002.

NATURAL GAS

Natural Gas Markets

In contrast to the record high prices experienced in 2001, Alberta spot gas prices remained below \$4 per gigajoule for the majority of 2002 (Figure 6). However, as the market entered the

FIGURE 6
Alberta Natural Gas Prices - AECO "C"
(\$ per gigajoule)



2002/03 heating season, gas prices increased about 25 percent to just over \$5 per gigajoule. This price increase reflected a number of factors including normal increases in seasonal heating demand, expectations that North American gas production would continue to decline moderately, and increases in crude oil prices as a result of global events.

Gas well drilling activity in Canada during 2002 was near historically high levels, though down from the record gas drilling that occurred during the previous year. Lower average natural gas prices in 2002 and historically high storage levels in North America following winter 2001/02 contributed to lower drilling levels compared with 2001.

Demand

Canadian natural gas demand increased during 2002 by 2.4 billion cubic metres to a level of 69.2 billion cubic metres, a 3.6 percent increase over

2001. Domestic gas consumption rose in spite of very mild weather for the majority of the 2001/02 heating season. The strength of the Canadian economy, which grew at an annual rate of 3.4 percent, combined with lower gas prices, supported gas demand increases.

In 2002, domestic gas consumption in the Maritime gas market was up sharply, totaling about 1.2 billion cubic metres. This increase in consumption was due to construction of additional distribution facilities and favorable prices compared with alternate fuels.

Production

Average gas production declined about one percent in 2002, to 482 million cubic metres per day in 2002 from 487 million cubic metres per day in 2001. The decline in average production is

primarily attributed to lower drilling levels through the year in the WCSB and declining production from several gas fields, including the Ladyfern field in northeast British Columbia.

Total Canadian marketable gas production in 2002 reached 176 billion cubic metres. The distribution of production by province has shifted slightly, largely due to declines in Alberta. In 2002, Alberta accounted for 77 percent of total Canadian production, British Columbia 15 percent, Saskatchewan three percent, Nova Scotia three percent, NWT and Yukon one percent, and Ontario less than one half of one percent.

Reserves

The NEB's estimate of remaining marketable gas reserves at the end of 2001 is 1 615 billion cubic metres (Table 6). Strong exploration activity in 2001 contributed to a reserves replacement of about 98 percent of gas production during 2001. Over the last five years, cumulative additions of marketable gas reserves replaced 86 percent of total gas production (Table 7). Despite reduced drilling in 2002, discoveries of new large pools in British Columbia and southwest Saskatchewan (Shackleton) were announced.

Natural Gas Exports and Imports

In 2002, net export volumes were 98.2 billion cubic metres, a decrease of 1.6 percent from 2001, but three percent above the five-year average. Total gross exports for 2002, at 105.3 billion cubic metres, were down one percent from the previous year because of a weaker U.S. economy and a rebound in available hydroelectric power in western U.S. markets. Imports of natural gas increased to 7.1 billion cubic metres compared with 6.5 billion cubic metres in 2001, corresponding to the overall increase in domestic demand for 2002.

Net exports accounted for 56 percent of total Canadian production in 2002, down from 59 percent in 2001 (Figure 7). The distribution of exports in 2002 was 43 percent to the Midwest and Mountain regions, 30 percent to the Northeast, and 27 percent to California and the Pacific Northwest. About 83 percent of these exports flowed under short-term orders; the remainder of exports flowed under long-term licences (Figure 8).

TABLE 6
Estimates of Established Reserves of Marketable Natural Gas at 31 December 2001
billion cubic metres

	2002	2001
British Columbia ^(a)	663.1	252.1
Alberta ^(b)	4 178.2	1 182.7
Saskatchewan ^(c)	215.0	77.6
Ontario ^(d)	44.6	11.6
NWT and Yukon	26.8	14.0
Nova Scotia - Offshore ^(d)	85.0	76.5
Total	5 212.7	1 614.5

(a) British Columbia Ministry of Energy & Mines and NEB common database

(b) Alberta Energy & Utilities Board and NEB common database

(c) Provincial estimate for 31 December 2001

(d) Canadian Association of Petroleum Producers

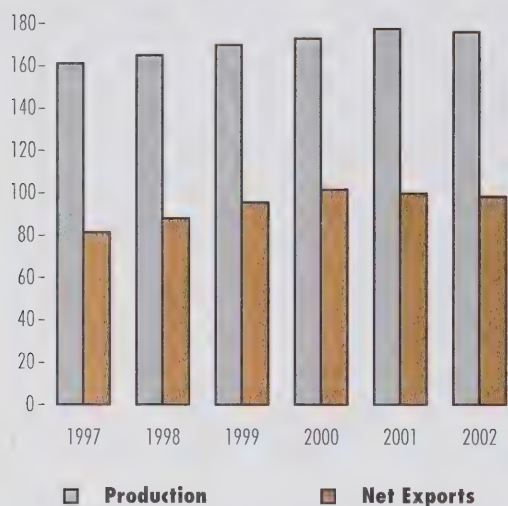
TABLE 7
Natural Gas Reserves, Additions and Production
billion cubic metres

	1997	1998	1999	2000	2001	Total
Additions ^(a)	130	119	152	153	172	726
Production ^(b)	161	165	170	173	177	846
Total Remaining Reserves	1 698	1 651	1 629	1 622	1 615	

(a) East Coast reserves added in 1997; production started in late 1997

(b) Provincial Agencies, Offshore Board

FIGURE 7
Canadian Natural Gas Production and Net Exports
 (billion cubic metres)



The revenue from Canadian natural gas exports declined sharply, from \$26 billion in 2001 to \$17 billion in 2002, a decrease of about 32 percent, reflecting reduced export volumes and lower natural gas prices. The average gas export price was \$4.37 per gigajoule in 2002 versus \$6.04 per gigajoule in 2001, a decrease of 28 percent.

ELECTRICITY

The Board's electricity mandate relates primarily to the construction and operation of international power lines and the export of electricity. Challenges are presented by the significant ongoing changes in the structure of the North American electricity industry. The Board must be aware of these changes and their potential impacts, while continuing to meet its legislated regulatory and advisory obligations.

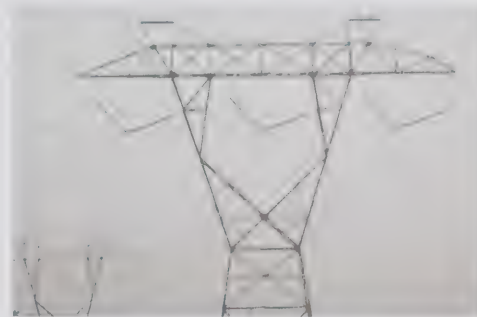
FIGURE 8
Natural Gas Supply and Disposition
 (billion cubic metres)



Market and Restructuring Developments

Beginning in the early 1990s, major initiatives have been undertaken to restructure electricity markets in North America. In the traditional market structure, a single utility performed the functions of generation, transmission and distribution of electricity within a defined franchise area, with limited access to other markets. Prices paid by consumers were based on the embedded costs approved by regulators.

The intent of restructuring is to separate the three functions and to introduce competition in the generation sector. Also, open access to transmission grids, or wholesale access, is provided to enable distribution companies and, in some cases, other large buyers to purchase electricity from the most competitive generation sources. Retail access occurs when marketers have the ability to obtain access to distribution systems to sell electricity to end-use consumers, thus competing with the incumbent distribution companies, and allowing consumers a choice among suppliers. Full retail access occurs when all end-use consumers have this choice. Prices in the restructured environment are negotiated between buyers and sellers.



Because the regulation of the electricity industry remains mainly with the provinces, the extent of restructuring in Canada varies across the country depending on the circumstances and choices of each province. At the end of 2001, most provinces had open access to electricity transmission grids and some competition in generation (i.e. independent power producers). To some extent, open access to transmission was motivated by the need to provide reciprocal access to U.S. entities in order to gain access to U.S. wholesale markets (see below). With its introduction of full retail access on 1 January 2001, only Alberta had a completely restructured market.

Major developments with respect to restructuring in Canada during 2002 include the following:

On 1 May 2002, Ontario opened its market to wholesale and retail competition. Wholesale prices are established on the basis of competitive bids and offers in the IMO¹-administered market and retail prices paid by consumers reflect these prices. An important aspect of Ontario's restructuring is the Market Power Mitigation Agreement, which, among other provisions, specifies the terms under which the generating assets of the former Ontario Hydro will be divested. On 11 November 2002, the provincial government announced a retail price cap of 4.3 cents per kilowatt hour for residential and other designated small-volume consumers, retroactive to 1 May 2002 and extending to May 2006. The government also initiated an inquiry into the operation of certain aspects of the Ontario market.

Following its December 2001 policy announcement, *Nova Scotia's Energy Strategy*, the Nova Scotia provincial government established the Electricity Market Governance Committee in May

1 Independent Electricity Market Operator of Ontario.

2002. Competition will be introduced in a staged process beginning with electricity sales to the province's six municipal utilities. There will also be competition in the construction of new generation and access will be permitted to the transmission system and to markets.

In New Brunswick, specific initiatives toward restructuring the electricity market were announced following the release of the government's *White Paper on Energy Policy* in January 2001. On 21 June, NB Power filed an application with the New Brunswick Board of Commissioners of Public Utilities for an Open Access Transmission Tariff, which would enable the opening of a competitive market in April 2003. This would allow 40 large industrial and three wholesale transmission customers to choose their respective electricity suppliers. The tariff also includes a standard interconnection agreement to bring consistency and efficiencies to connecting competitive generation. The government announced it was adopting a number of the recommendations of its Market Design Committee, including: establishing an independent system operator for monitoring and controlling access to New Brunswick's transmission system; establishing a bilateral market; and restructuring NB Power into a holding company, with operating subsidiaries required to operate on a commercial basis.

In November, the Government of British Columbia announced a number of initiatives for the electricity industry in its new energy policy, *Energy for Our Future: A Plan for BC*. The policy promotes private sector development of generation and, by the creation of the BC Hydro Transmission Corporation, a separate entity from BC Hydro, the policy also promotes improved access to the B.C. grid and participation by independent power producers in U.S. wholesale markets. According to the policy, consumers in British Columbia are expected to continue to benefit from the low cost of installed generation, referred to as the "heritage contract." An inquiry into BC Hydro's rates is expected before the end of the fiscal year 2003-2004 and the entire plan is expected to be implemented by the end of 2004.

The major current initiative in the restructuring of U.S. electricity markets is the formation of Regional Transmission Organizations (RTOs), as mandated by the U.S. Federal Energy Regulatory Commission (FERC). The purpose of RTOs is to facilitate non-discriminatory access to transmission systems and thereby promote competition in wholesale markets as intended by FERC Order 888. A key aspect of Order 888 is the reciprocity requirement, which has implications for Canadian exporters. Reciprocity effectively requires that Canadian transmission companies provide U.S. marketers access to their transmission facilities. Canadian exporters utilizing those facilities then qualify for a licence from FERC to market electricity in U.S. wholesale markets.

FERC Order 2000 (December 1999) defined the functions and characteristics of an RTO. Given the international nature of transmission systems, Canadian participation in RTOs was invited. In July 2001, the FERC, in a series of orders, proposed that there be four RTOs in the U.S., one each in the Northeast, the Southeast, the Midwest, and West. The Electric Reliability Council of Texas, which includes most of the state of Texas, would be a fifth RTO. After consultation, and to address issues raised by the industry and state regulators, the FERC issued a Notice of Proposed Rulemaking on Standard Market Design (SMD) in July 2002. The main elements of SMD include a standard tariff, a method of managing transmission congestion, market monitoring and ongoing input from state regulators by Regional State Advisory Councils. While SMD final rule is expected to further the RTO initiative, there remain several regional issues to be addressed. During the fall and winter of 2002-2003, the FERC engaged the industry, including potential Canadian participants, toward developing a final rule in 2003.

FERC's plans to oversee implementation of SMD across the United States by the end of 2004. The exact timing and regional adaptation of SMD is expected to vary and the number of RTOs that will eventually result is uncertain. The terms of participation in RTOs for Canadian parties will be based on the unique circumstances and needs expressed by the transmission entities in each province.

Electricity Production

Canada's electricity generation base is dominated by hydro facilities, primarily in the provinces of Quebec, Manitoba, British Columbia, and Newfoundland. Although some areas of the country experienced low water reservoir levels in the first part of the year, hydro production improved in the latter half of the year, thus returning hydro generation to normal levels (Table 8). This decreased the need to run thermal facilities. Nuclear production also declined, partially due to maintenance outages. The net result was that electricity production increased by 2.4 percent compared with 2001. Domestic demand increased by about three percent, therefore gross exports declined slightly.

TABLE 8
Electricity Production^(a)

	1998	1999	2000	2001	2002 ^(b)
Hydroelectric	327.0	341.7	353.3	328.2	350.9
Nuclear	67.5	69.3	68.7	72.4	69.9
Thermal	149.5	147.1	160.8	164.2	157.6
Total	544.0	558.1	582.8	564.8	578.4

(a) Source: Statistics Canada *Electric power Statistics*
Net production by plant type in Canada

(b) Estimates

Exports and Imports

Low reservoir water levels during the first half of 2002 also took their toll on Canadian hydroelectricity exports. Although conditions began to improve in the second half of the year, exports continued to decline from 2001, and reached their lowest level since 1993. Firm and interruptible exports in 2002 totaled 36 terawatt hours.

In contrast, the number of companies that exported electricity from Canada increased to 30, an all time high. This reflects an increase in the number of export authorization applications before the Board in 2002, and an increase in the number of marketers (i.e., companies that neither own nor are affiliated with generating assets) involved in the export market. Open access in Alberta and Ontario's markets also facilitated marketer involvement.

Despite the increased number of players in the electricity export market, the five historically largest exporters continued to dominate the export market. Hydro Québec, Manitoba Hydro, Powerex, Ontario Power Generation Inc./Ontario Hydro Interconnected Markets, and NB Power accounted for 91 percent of electricity exports.

Export and import prices both moderated in 2002 and returned to levels similar to those seen in 1999, prior to California's electricity crisis. Likewise, export revenue declined to \$1.8 billion. Revenues received for electricity exports in 2002 averaged \$46 per megawatt hour and imports averaged \$36 per megawatt hour.

FIGURE 9**International and Interprovincial Transfers of Electricity^(a)**

(gigawatt hours)



Imports declined slightly from their 2001 level to 13 terawatt hours, but were still strong. Ontario relied on imports from the Northeast U.S. to meet its peak demand in the hot summer months. On the other side of the continent, plentiful water flows in the Pacific Northwest resulted in low-priced electricity, which British Columbia at times chose to import instead of scheduling its own generation.

Overall, Canada's net exports in 2002 were 23 terawatt hours, which is a slight increase from last year since the decrease in imports outweighed the decrease in exports. Figure 9 shows the interprovincial and international transfers of electricity in 2002.

safety and environment

A primary aspect of the NEB's purpose is to promote safety and environmental protection. This is reflected in two of the NEB's four corporate goals. While these two goals have separate intents, they are operationally linked and form the cornerstones of the NEB's physical regulation program. Initiatives undertaken by the NEB are designed to result in both increased safety and increased protection of the environment.

The inherent risks associated with facilities under the NEB's jurisdiction are managed through competent design, construction, operation and maintenance practices. The NEB plays a significant role in safety and environmental protection by ensuring that a regulatory framework that encourages companies to maintain or improve their performance is in place and in line with public expectations.

The Board ensures that any safety and environmental risks associated with the construction and operation of regulated facilities are identified and managed by pipeline companies. The Board does this by:

- assessing new facilities applications for associated safety and environmental issues;
- ensuring that appropriate mitigative measures, conditions, and environmental protection plans are in place before granting project approval;
- monitoring construction and operations by inspections and audits to verify that regulatory requirements, as well as other standards identified through the application process, have been and will continue to be met;
- investigating any failures or incidents that occur, with the intent of preventing similar incidents;
- developing regulations and guidelines for the safety and protection of the public, property and the environment; and
- conducting inquiries into safety and environmental issues.

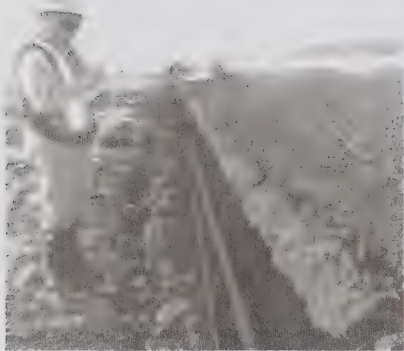
To provide direction and leadership in safety and environmental protection, the Board regularly meets with industry through various forums. In 2002, the NEB hosted two workshops in which industry and other stakeholders were invited to participate. *The Pipeline Public Awareness Workshop*, held in Halifax in June, was devoted to sharing the pipeline industry's damage

*Goal 1:
NEB -
regulated
facilities are
safe and
perceived to
be safe.*

*Goal 2:
NEB -
regulated
facilities are
built and
operated in a
manner that
protects the
environment
and respects
individuals'
rights.*

prevention and public awareness best practices. The second workshop, also held in June, was designed to provide an understanding of the NEB audit program, discuss and finalize revisions to the *Guidance Notes for the Onshore Pipeline Regulations, 1999*, and solicit feedback on the Board's proposed approach to the regulation of pressure vessels and piping. In addition, the NEB participated in the 2002 International Pipeline Conference by presenting four papers on pipeline regulation.

In 2002, the Board continued its work on the consolidation of safety data submitted by NEB-regulated companies for its Safety Performance Indicator (SPI) initiative. The SPI initiative allows the Board to obtain benchmark safety data for future comparison between NEB-regulated companies and companies regulated by other agencies. A report detailing the SPI data, and comparing results with other jurisdictions, will be published in early 2003.



ENVIRONMENTAL ASSESSMENTS

Upon receiving an application, the Board determines whether an environmental review is required under the NEB Act or under both the NEB Act and the CEA Act. When an application does not trigger the CEA Act, the Board considers the environmental aspects of the project in accordance with the NEB Act as part of its public interest mandate. When the CEA Act is triggered, the majority of projects require the Board to conduct an environmental screening of the proposed project.

However, certain applications require the completion of a comprehensive study and the preparation of a comprehensive study report (CSR). The CSR is submitted to the Minister of the Environment, who is responsible for determining the next steps in the environmental assessment process. A public comment period takes place once the CSR has been submitted and prior to the Minister's decision.

In 2002, the NEB continued as the lead responsible authority for two projects that require CSRs. The first was for NB Power's application to construct and operate a 345 kilovolt international power line, approximately 95 kilometres in length, that would run west from the Point Lepreau Peninsula to the international boundary near Woodland, Maine. The second was for an application by Westcoast to extend the Grizzly Raw Gas Transmission System and construct the Weejay lateral. In addition, the NEB participated as a responsible authority in a third CSR for the EnCana Deep Panuke project. All three CSRs were completed and submitted to the Minister of Environment.

COMPLIANCE MONITORING

The NEB monitors the pipelines and facilities it regulates from the construction phase through to abandonment. NEB inspection staff monitors construction to verify compliance with:

- the conditions of the project approval;
- the requirements set out in the NEB's *Onshore Pipeline Regulations, 1999* (OPR-99), relevant codes and the company's construction safety manual; and

- the commitments set out in the company's environmental protection plan and its application.

In addition to inspections undertaken during construction, NEB inspectors conduct post-construction monitoring to evaluate the success of the reclamation measures and to verify that the environment and property is being properly protected.

Once a pipeline or facility is in operation, NEB inspection officers conduct safety inspections of pipeline facilities, such as pump or compressor stations, on a periodic basis depending on the risk posed by the operating facility. These safety inspections are conducted to determine compliance with the requirements of NEB regulations and the *Canada Labour Code, Part II*. The NEB also conducts inspections along existing pipeline systems to identify whether third party excavation work is being completed in compliance with the *National Energy Board Pipeline Crossing Regulations*. On frontier lands, the NEB conducts similar inspections related to geophysical and drilling programs and production operations to verify compliance with the approved program and relevant regulations. Occupational safety and health matters are also addressed during these inspections.

The NEB supports a co-operative approach to compliance, working with pipeline companies to ensure that environmental commitments and safety requirements are met. As part of this approach, the NEB promotes safety and environmental training for construction personnel to ensure that construction crews are aware of and understand the project's safety and environmental requirements and the NEB's responsibility to monitor compliance. When a non-compliance situation is identified, it is generally handled by obtaining an immediate and voluntary correction by the company. Inspection Officers may also ask for a written assurance of voluntary compliance (AVC) from a pipeline company if the situation cannot be corrected immediately. NEB Inspection Officers can also issue a field order when they believe a situation could jeopardize safety, the environment or property and that corrections must occur immediately. In 2002, the NEB received 217 AVCs and issued one field order for non-compliant activities.

The NEB tracks the extent to which companies comply with the conditions issued on facility approvals and the effectiveness of those conditions in protecting the environment. For projects authorized in 2002, where information is available through Board inspections or post-construction monitoring reports, 94 percent of conditions were effective in contributing to the goal of environmental protection. The Board will continue to monitor condition compliance for those projects that are not yet complete, and therefore information is not available, or where the post-construction monitoring reports have not yet been filed. The NEB uses this information to improve the clarity and effectiveness of conditions that it places on facility approvals.

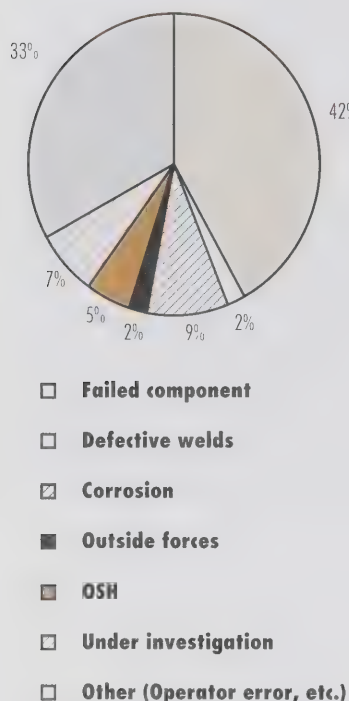
Management System Audits

During 2002, the Board continued with the implementation and further development of its comprehensive audit program of company management systems. The audit program is



designed to assess compliance with the OPR-99. Eleven management system audits were conducted in 2002, including four that had a broad scope, five that focused on emergency preparedness and response, and two that focused on pipeline integrity management. In response to audit findings, the Board received eight corrective action plans during the year and is presently developing a follow-up program.

FIGURE 10
Causes of Incidents in 2002



Incident Investigation

Incidents include those events that may cause death or serious injury to a person, a significant adverse effect upon the environment, an unintended fire or explosion, or the unintended or uncontrolled release of gas or hydrocarbon. Even minor incidents can indicate the condition of a pipeline or a required improvement to safety programs.

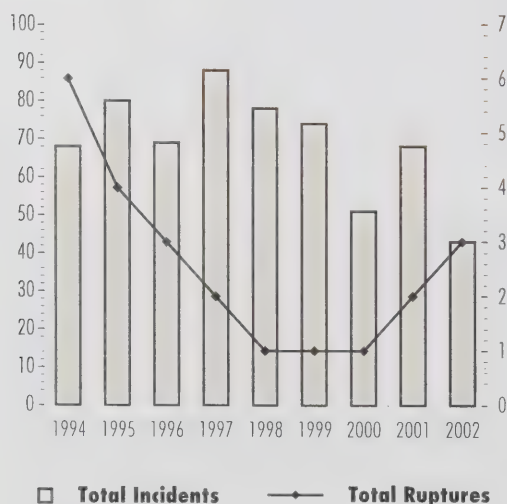
The NEB, in co-operation with the TSB, investigates all reported incidents to determine cause, whether any trends are evident, and what action is necessary to prevent similar occurrences in the future. In general, the NEB conducts on-site investigations for those incidents that result in death, serious injury or a significant release of hydrocarbons. Figure 10 represents the causes determined for incidents that occurred in 2002.

There has been a steady improvement in industry's safety performance in recent years. Forty-three incidents were reported under the OPR-99 in 2002. This number is significantly lower than the 68 reported in 2001 and the seven-year average of 66 incidents (Figure 11). Of the 43 incidents reported in 2002, more than

seventy percent occurred in controlled areas such as compressor and pumping stations or gas plants: 25 occurred at compressor and pump stations; six at gas plants; with the remaining 12 occurring along the pipeline right of way. In 2002, two incidents resulted in injuries to pipeline workers, with one of those directly related to construction. This is one-half of the 2001 total of four injuries, where one was directly related to construction.

The NEB has a safety target of zero ruptures on the pipelines it regulates. In 2002, there were three ruptures on NEB-regulated pipelines. The first rupture occurred on 14 April 2002 on TransCanada's 914-mm diameter natural gas line 100-3 near Brookdale Manitoba (west of Winnipeg). The final investigative report by the TSB into the cause of this rupture is scheduled for release during the first quarter of 2003.

FIGURE 11
Pipeline Incidents and Ruptures 1994 to 2002



On 15 May 2002, a rupture occurred on Westcoast's 457 mm diameter sour gas pipeline, located approximately seven kilometres southeast of Fort St. John, British Columbia near the Alaska Highway. The NEB is currently investigating the cause of this incident and expects to release a public report by the second quarter of 2003.

On 7 December 2002, Trans Northern experienced a pipeline rupture on its 273 mm diameter mainline near Paroisse de Saint Clet, Quebec, close to the Ontario border. The rupture resulted in a release of 32 cubic metres of diesel fuel onto agricultural land. This incident is presently under investigation by the TSB.

The NEB is responsible for verifying that companies under its jurisdiction have adequate emergency response plans to mitigate any negative effects on personnel safety, public health or the environment resulting from oil spills or natural gas leaks. Emergency response plans are examined during audit to ensure that appropriate procedures are in place. The NEB encourages and participates in emergency response exercises sponsored by pipeline companies.

The NEB's primary role during an emergency is to monitor the company's response, ensuring that all reasonable actions are being taken to protect public safety and the environment. The NEB uses an information tracking system to verify that the company fulfils its remedial responsibilities regarding sites that have been affected by spills or releases. In 2002, 33 spills and releases were reported, down from 46 reported the previous year. In addition to the three ruptures, one other significant spill involved the release of 1000 cubic metres of crude oil at the Enbridge pump station in Kerrobert, Saskatchewan as a result of a failed flange gasket.

In the frontier region, a motor vehicle accident resulting in a fatality occurred on 4 February 2002 on a private road used for access to a seismic program in the NWT. The NEB investigated the accident under the COGO Act and under the *Canada Labour Code Part II* on behalf of Human Resources Development Canada and in conjunction with Workman's Compensation NWT. In April 2002, the NEB issued a Safety Advisory to operators

identifying the hazard and advising them to ensure proper safety equipment and procedures are in place to reduce the hazards when attempting to perform equipment repairs on roadsides. A report was submitted by the NEB to Human Resources Development Canada to further assist in its independent investigation.



Hazardous occurrences in the frontier, as defined by the *Oil and Gas Occupational Safety and Health Regulations* under the *Canada Labour Part II*, decreased from 85 in 2001 to 45 in 2002. This decrease was primarily related to a reduction in spills and fewer incidents of equipment breaking through ice. Disabling injuries increased marginally from 2.57 per million hours worked in 2001 to 2.79 per million hours worked in 2002.

DEVELOPMENT OF REGULATIONS AND GUIDELINES

A key activity in promoting safety and environmental protection is the development of regulations and supporting guidelines. The NEB is continuing to move toward a goal-oriented approach to its regulations in order to promote increased industry responsibility, allow for

flexibility and efficiency, and provide opportunities to adopt improved operational and safety techniques in a more timely manner. The goal-oriented approach places an increased emphasis on risk assessment and management systems.

In 2002, the *Processing Plant Regulations* were published in *Canada Gazette Part 1* and it is expected that the regulation will come into force in early 2003. This regulation deals with the design, construction, operation and abandonment of federally regulated gas processing plants and was developed using the goal-oriented approach. The Board also made progress on the proposed *Damage Prevention Regulations*, which deal with damage prevention for buried pipelines. In preparation for the development of this new regulation, the Board undertook a comprehensive survey involving over 1 200 respondents representing interested companies and other stakeholders. A copy of this report can be found on the NEB's Internet site. A conceptual draft of the regulation was released in May and, during September, information sessions were held in central Alberta and rural areas of New Brunswick and Nova Scotia. Additional sessions and open houses are planned for the remaining regions of Canada in early 2003.



The NEB is also active in developing and maintaining regulations regarding exploration and development activities under the COGO Act. These regulations, developed in co-operation with NRCan, C-NOPB, C-NSOPB, the Nova Scotia Department of Natural Resources and the Newfoundland Department of Mines and Energy, ensure common regulatory approaches for activities in the offshore regions, the NWT and Nunavut. Consultations continued in 2002 to amend many of the regulations and guidelines under the COGO Act and mirror regulations under the Accord Implementation

Acts. Arising from comments from the Standing Joint Committee for the Scrutiny of Regulations, a number of amendments came into force in 2002 on the *Canada Oil and Gas Drilling Regulations* and the *Canada Oil and Gas Production and Conservation Regulations*. As well, the NEB has provided advice to Human Resources Development Canada for the update of the *Oil and Gas Occupational Safety and Health Regulations* under the *Canada Labour Code, Part II*. The C-NSOPB, the C-NOPB and the NEB also approved the *Offshore Waste Treatment Guidelines* in 2002. These guidelines describe minimum standards for the treatment and disposal of offshore drilling and production wastes.

In May 2002, the Board issued a *Memorandum of Guidance (MOG) on Consultation with Aboriginal Peoples*. The purpose of the MOG was to clarify the Board's role where the Crown may have an obligation to consult with Aboriginal peoples. In April 2002, the Board issued further guidance to regulated companies detailing the nature of information that should be filed with applications where the proposed project has the potential to interfere with Aboriginal rights. Since the release of the MOG, the Board has been committed to working with other federal departments and agencies to develop a workable framework for Aboriginal consultation in the context of the Board's mandate.

The Board also participated with industry, government and stakeholder groups in a number of initiatives to develop consensus-based standards, best practices and common approaches to

safety and environmental issues. For example, the NEB was involved in the revision of the Canadian Standards Association (CSA) standard for oil and gas pipeline systems, CSA Z662, which is scheduled for release in 2003.

RESEARCH AND DEVELOPMENT

The NEB acts as the secretary for the Environmental Studies Research Funds (ESRF) management board, which provides funding for environmental and social projects regarding petroleum exploration, development and production activities on frontier lands. In 2002, the Management Board approved 15 new studies and continued to provide funding to the updating of the CSA Standard for Offshore Structures. ESRF reports can be ordered through their Internet site at www.esrfunds.org.

economic efficiency

Goal 3: Canadians derive the benefits of economic efficiency.

The Board's third corporate goal is to ensure Canadians derive the benefits of economic efficiency. There are three main ways in which the Board has an economic impact:

- through the decisions it renders;
- through the energy market information it provides to Canadians; and
- through the efficiency of its regulatory processes.

In addition, the Board must manage its own expenditures efficiently.

IMPACT OF NEB DECISIONS

The Board strives to promote, through its decisions, the development of an efficient natural gas and oil pipeline infrastructure that meets the requirements of its users. An efficient infrastructure requires that there is an appropriate level of capacity to meet both upstream and downstream needs, that shippers have adequate service options, and that pipeline companies earn an appropriate return on their investments.

FIGURE 12
NYMEX HH/AECO "C"/Dawn Natural Gas Price
(\$/per gigajoule)



A good market measure of the adequacy of pipeline capacity can be obtained by comparing the prices between key market hubs. In the natural gas market, two of the most important hubs in North America are the AECO "C" Hub in Alberta and the Henry Hub in Louisiana. Figure 12 illustrates that prices associated with these two supply hubs have correlated closely since late 1998, indicating that there has been adequate capacity between the WCSB and eastern North American markets. A market hub is developing at Dawn, Ontario that allows many eastern gas buyers to purchase gas at the hub and elect not to hold transportation capacity on long-distance pipeline systems. Prices at the Dawn Hub also correlated well with the AECO "C" and Henry Hubs (also Figure 12).

There have been no applications with respect to major expansions of pipeline capacity serving the WCSB since the startup of the Alliance pipeline

system, reflecting the leveling off of production in the WCSB. In contrast, it appears that East Coast production will continue to grow, and in this regard the Board approved an expansion of the M&NP system to accommodate an additional 14 million cubic metres per day of production.

In 1994, the Board made a decision on a generic return on equity formula, which was intended to apply to most of the large pipelines under Board jurisdiction. Shortly thereafter, there were a number of negotiated settlements between pipeline companies and their shippers, in which they mutually agreed upon tolls and tariffs. As these were multi-year agreements, the Board had very few hearings on tolling matters for several years. The Board's generic formula is embedded in a number of the negotiated settlements, although some settlements include alternative means of determining the appropriate return on equity.

Recent changes in the structure of the pipeline transportation sector have made it more difficult for the pipelines to reach unanimous agreements with their shippers. Indications of this surfaced in 2001, as the Board held four hearings on toll matters. In 2002, the Board rendered a decision on an application from TransCanada requesting that it review the company's return on capital employed, which was based on the Board's 1994 formula from RH-2-94. In its decision, the Board denied the application, ruling that its own formula was still appropriate. The Board further ruled that the level of business risk facing the TransCanada Mainline has increased since 1994 and decided to increase the Mainline's deemed common equity ratio to 33 percent from 30 percent, effective 1 January 2001. TransCanada has applied to the Board for a review of this decision.

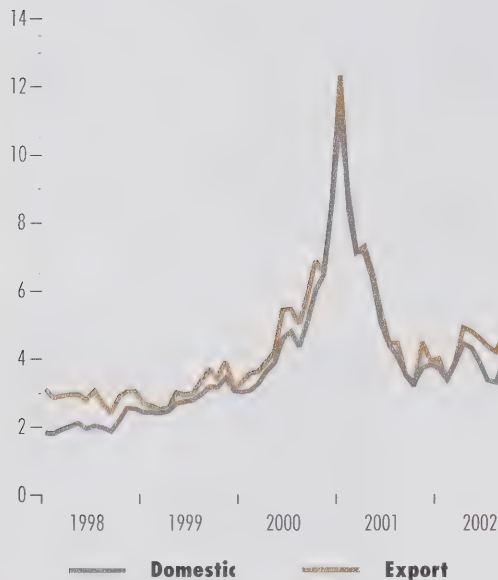
In September, the Board denied an application from the Province of New Brunswick requesting that the Board establish rules which would apply when it considers applications for short-term export orders for incremental supplies of Scotian offshore natural gas if those supplies could not meet both domestic and export requests for service. The Board decided that it would be inappropriate at this time to implement procedures that would unduly interfere with the normal operation of the natural gas market. In reaching this conclusion, the Board noted that the public hearing held on this matter, in July 2002, did not produce any direct evidence that Maritime gas buyers have not had access to Scotian offshore gas supplies on terms and conditions similar to those in export markets. Further, there was no evidence that any gas seller had refused to negotiate in good faith. The Board decided, however, that it must enhance its monitoring efforts of gas markets in Maritime Canada, and in that regard has established a team that will monitor the functioning of the Maritime gas market, including data collection and data reporting.

There has been considerable interest in strengthening the links in the North American electric power grid since the United States has begun opening up its wholesale electric power markets. In 2002, the Board received four applications for IPL facilities.



FIGURE 13**Eastern Export and Domestic Gas Price at the Alberta Border**

(\$ per gigajoule)



The Board monitors the domestic price of Canadian-produced natural gas versus the price of natural gas exports. In an open competitive market, one would expect that the commodity

price paid for natural gas, for example at the Alberta border, would be essentially the same for all gas buyers, whether domestic or foreign.

Figure 13 shows that the prices paid by domestic and export buyers were, in fact, very close throughout 2002.

FIGURE 14**Light Crude Oil Export and Posted Price at Edmonton**

(\$ per cubic metre)



With respect to crude oil, a similar relationship between domestic and export prices exists (Figure 14). This again demonstrates that Canadians have access to Canadian crude oil on price terms at least as favourable as export customers. The Board also monitors electricity markets, although this is somewhat more difficult due to the lack of functioning open markets in many parts of the country.

As part of its mandate, the Board monitors energy market activity and issues Energy Market Assessment (EMA) reports. These reports provide analyses of issues related to the major energy commodities. In 2002, the Board issued two EMA

reports, one on natural gas markets and the other on natural gas supply capability of the WCSB. The first was titled *Canadian Natural Gas Market Dynamics and Pricing: An Update* and was released in October. It examined the challenges that led to the unprecedented price volatility that was experienced over the winter of 2000/2001. The second, titled *Short-term Natural Gas Deliverability from the Western Canada Sedimentary Basin (WCSB) 2002-2004*, was released in December and focused on the outlook for production from the WCSB.

Every three to five years, the Board issues a long-term study of Canadian energy supply and demand. The Board is using a new approach in producing its upcoming supply and demand report. *Canada's Energy Future: Scenarios for Supply and Demand to 2025* uses scenarios to capture a broad range of plausible outcomes for future energy production and consumption patterns in Canada. The report will be published in early 2003.



The Board also compiles several statistical reports related to its regulatory role in the oil, gas and electricity industries. Data is compiled on a monthly basis and annual summaries, as far back as 1985, are available. Subject areas include: natural gas exports, imports, volumes and prices; exports of propane and butane; crude oil and petroleum product exports; light and heavy crude oil export prices; crude oil supply and disposition; and imports and exports of electricity. These reports are available on the Board's Internet site.

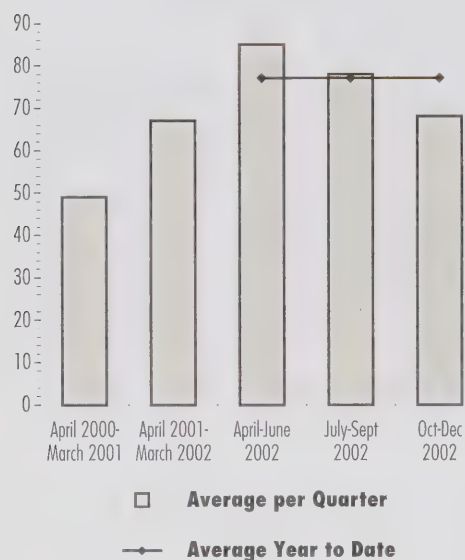
REGULATORY EFFICIENCY

While diligently fulfilling its responsibility to protect the public interest, the Board is mindful of industry's concerns regarding application cycle times and continuously reviews its processes for efficiency. The Board realizes that companies need clear regulatory requirements and dependable timelines. The Board ensures that its application processes are efficient by: engaging in dialogue with stakeholders; clarifying the Board's processes and expectations; implementing new approaches based on goal-oriented regulation; negotiating with other agencies to ensure that regulatory processes are harmonized to minimize duplication; and by pro-actively preparing for major applications.

The Board's *Section 58 Streamlining Order* permits companies to undertake, without applying for Board approval, certain routine facilities projects that have insignificant environmental impact, occur on company property, and do not result in safety or third party concerns. In 2001, companies spent \$160 million on 932 projects that did not require applications to the Board. These projects represented a zero cycle time for the companies. A revised *Section 58 Streamlining Order* was issued in late 2002 to clarify the order, modify reporting requirements and exclude an increased number of routine projects from the Board's application process. A significant review and expansion of the order is anticipated in 2003 with the incorporation of the proposed new *Exclusion List Regulations* amendments under the CEA Act. In a related



FIGURE 15
Cycle Times for all Non-Hearing Facility
Applications by Quarter



initiative, the Board issued a letter to all companies in February 2002 clarifying that companies do not have to apply to undertake investigative digs and pipeline replacements. This resulted in further increases to regulatory efficiency for regulated companies. Through these and other initiatives, the Board has seen its Section 58 cycle times decrease over the course of the year (Figure 15).

The Board has initiated a project to conduct a comprehensive review and revision of its *Guidelines for Filing Requirements* (GFR). The GFR were developed to assist companies in their preparation of applications. Completion of the review is expected by the end of 2003. This review and the resulting modifications will ensure that the information contained in the GFR is clear, accurate and complete so that the Board's expectations are understood and can be applied consistently by applicants. It is expected that the final product will increase the completeness of applications resulting in a reduction of times for application reviews.

The Board continuously seeks out ways of improving the efficiency and effectiveness of its regulatory processes. In this regard, the Board proposed a new process to resolve disputes, namely the Appropriate Dispute Resolution (ADR) program. The goal of the ADR program is to provide flexibility to resolve some issues either within or outside the traditional regulatory process. Initial consultations about ADR opportunities and challenges took place with industry and the public during February and March 2002. Further comment was sought from September 2002 to February 2003 on the proposed design and content of the ADR program.

TABLE 9
Historical Expenditures and Staffing

Fiscal Year (April 1 to March 31)	Expenditures \$000	Full-time Equivalents
1996-1997	26 855	272
1997-1998	28 048	264
1998-1999	53 187 ^(a)	277
1999-2000	26 900	286
2000-2001	26 216	289
2001-2002	28 836	281
2002-2003	31 910 ^(a)	287 ^(b)

^(a) In 1998 the NEB made payments of \$22.2 million for out-of-court settlements with the energy industry relating to relocation costs of the NEB from Ottawa to Calgary.

^(b) Estimated.

NEB'S EXPENDITURES AND FINANCIAL REPORTING

The NEB's expenditures and staff levels for the last six fiscal years are shown in Table 9. Since 1991, up to 90 percent of the NEB's operating costs have been recovered from the regulated community. Additional information on budgets and plans may be found in the *NEB's 2002-2003 Main Estimates, Part II* and the *2002-2003 Estimates Part III - Report on Plans and Priorities*, both of which are available on the NEB's Internet site.

The NEB produces two sets of financial statements on an annual basis. One set is prepared on a fiscal year period ending March 31 using the accrual basis of accounting in accordance with Treasury

Board Accounting Standards and is based on generally accepted accounting principles (GAAP). This set of financial statements, which form part of the Public Accounts of Canada, consists of a Statement of Financial Position, Statement of Operations, Statement of Cash Flow and accompanying notes. The Office of the Auditor General determines when or if they will audit the NEB's Public Accounts financial statements in order to express an opinion on the consolidated statements of the Government of Canada.

The other set, for cost recovery purposes, is prepared on a calendar year period and has traditionally used a modified cash basis of accounting. This statement consists of a Statement of Expenditures and Receipts and includes expenditures and receipts recorded on a cash basis, except for goods and services provided by other government departments and agencies, which are estimates of expenditures paid by other government organizations, and the accompanying notes. This statement is audited by the Office of the Auditor General on an annual basis and is used as the basis for determining the costs recovered in accordance with the *National Energy Board Cost Recovery Regulations*. Plans are underway to move the basis of accounting for the cost recovery financial statement to an accrual basis in accordance with GAAP.

Further information on either set of financial statements can be obtained by contacting the NEB. The NEB Statement of Expenditures and Receipts can be located on the Board's Internet site at http://www.neb-one.gc.ca/pubs/index_e.htm. The consolidated financial statements for the Government of Canada can be found at http://www.pwgsc.gc.ca/regen_text/pub-acc-e.html.

public engagement

The Board's goal with respect to public engagement is to be responsive to the changing needs of the public and proactive in identifying opportunities for stakeholders to become engaged in Board practices. This promotes and facilitates the Board's decision making process, which requires fairness (the right for interested parties to be heard) and completeness (to consider all possible evidence in order to make decisions in the public interest). To achieve this outcome, the Board needs to ensure that its culture is one that facilitates the engagement of stakeholders in its processes. The Board continually works toward providing open and accessible means for the public to share their views and to participate in Board matters.

Goal 4: The NEB meets the evolving needs of the public to engage in NEB matters.

The past year saw the Board embrace several new initiatives designed to meet the evolving needs of the public to engage in NEB matters. These included the first phase of a three-phase consultation plan for revising the *Guidelines for Filing Requirements* (GFR), extensive external consultation with regard to the upcoming *Supply and Demand Report*, further understanding in the area of developing effective Aboriginal Engagement opportunities, and the emergence of an Appropriate Dispute Resolution (ADR) program. The *Co-operation Plan*, another notable achievement in this area, was championed by the Board and outlines a co-ordinated effort in facilitating future pipeline applications from the North and public participation in the process.

Further evolution of Goal 4 resulted in a new indicator for measuring the Board's success in this area. In the future, the Board will strive to achieve "stakeholder satisfaction with NEB process, information and interaction." To achieve this end state, the Board works toward fulfilling the following objectives in the creation of its public engagement programs:

- Building Internal Capacity;
- Understanding Public Engagement Needs;
- Removing Barriers.

BUILDING INTERNAL CAPACITY

The Board believes in the importance of being a learning organization and promotes a shared learning process. It also believes in the importance of fostering a consultative culture. To this end, the Board provides skill enhancement opportunities to enable employees to undertake effective and appropriate public engagement. It also encourages internal consultation among teams and business units within the organization. As a result of these efforts, public engagement is quickly becoming a widely accepted operating practice within the Board.

Learning circles and hearing best practices

At the conclusion of Board projects and public hearings, employees come together to review their efforts and outcomes. These post-project findings are valuable and are applied to future initiatives. The result is increased efficiency and effectiveness of Board processes and engagement of the public in these processes.

Public engagement training

The Board provides employees with opportunities to further their skill set in specialized areas to better equip them to communicate with Canadians. Writing documents in plain language, determining inter-personal communication styles, and French and English language training were several in-house training initiatives that were offered to employees in 2002. The Board also sends employees to participate in the Annual International Association of Public Participation conference to gain additional ideas on public engagement practices.



Dealing with disputes

In 2002, the Board continued development of an Alternative Dispute Resolution program to provide stakeholders with an option for settling disputes in addition to the Board's traditional regulatory process. Board employees will be trained in many areas of providing this service, from awareness and application of this new option to acquiring mediation skills in order to facilitate stakeholder requests.

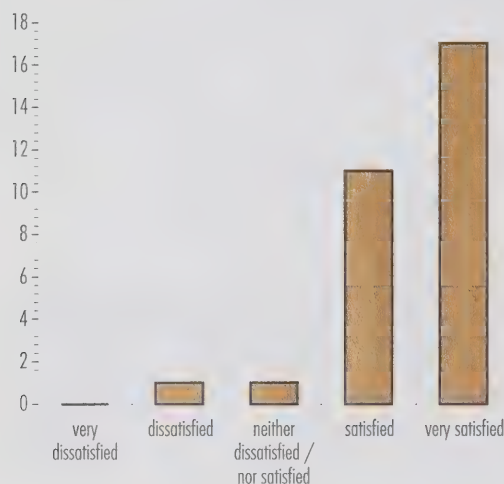
Diversified employee base

The Board works toward creating an employee base that is reflective of the Canadian population. This assists the Board in its ability to understand cultural differences, recognize the diverse needs of the Canadian public and assist in work within those communities. Currently, Board employees reflect more than 30 cultures (languages).

Developing new approaches

The Board is continually developing new approaches to deal with issues that come before it. Board decisions do not mean that for one request to be granted another has to be denied. One example of this is the Board's response to a hearing initiated by the Province of New Brunswick to establish new rules for short-term exports of incremental Scotian offshore natural gas. The Board decided that it was not appropriate to establish new rules. Instead, it mobilized a team of technical specialists to monitor the Maritime natural gas market and produce public reports in consultation with key players in the Maritime gas market and the public.

FIGURE 16
Post Hearing Survey Results 2002
Overall, how satisfied were you with your interaction with the NEB?



2002, the Board sought feedback from participants of four hearings, as well as public consultation sessions, public information sessions, technical conferences and audit procedures. Results from hearings in 2002 indicated that, overall, most participants were satisfied or very satisfied with their interaction with the NEB (Figure 16). The Board will address those areas of engagement that participants felt could be improved.

Engaging stakeholders in designing the process

The Board has added a multi-phased approach to several areas of consultation allowing interested parties to help determine the scope of projects and choose a preferred method of engagement. This approach was recently used on the Board's revision of its GFR.



with insight into its responsibility as a national regulator and engages meeting participants in two-way dialogue on current issues.

In 2002, Board Members visited Ontario to consult with parties who have an interest in Board matters. Approximately ten meetings were conducted over a five-day period. Members met with representatives of energy associations, institutes, landowners and industry groups, and other regulators.

UNDERSTANDING PUBLIC ENGAGEMENT NEEDS

Understanding the public's concerns and their need to be consulted is paramount for the Board to be able to make informed decisions. Understanding how the public can and wants to be involved with the Board and its processes assists the Board in offering effective options in areas where the public is engaged. The Board uses the following practices to gain an understanding of the public's needs:

Feedback

The Board uses questionnaires as a primary tool to gather stakeholder feedback. Questionnaires are sent to individuals who have participated in Board activities to gauge their satisfaction with Board processes, information and their interaction with Board staff. In

Board Visits

Each year, Board Members travel to a different region in Canada to meet with local groups in order to come to a shared understanding of the role these groups have within Board processes. As well, the Board provides these groups

The Board Members also traveled to Edmonton to meet with the Alberta Environmental Network (a network comprised of member committees and associations). In addition to clarifying mandates, roles, and updating current activities, discussion centered on the processes for reviewing northern pipeline proposals, export procedures and environmental issues, as well as public involvement.

REMOVING BARRIERS TO PARTICIPATION

The Board is conscious of, and tries to remove, anything that could be perceived as a barrier to participation in its processes. Barriers are deterrents that would hinder or discourage interested parties from becoming involved in the Board's activities. Eliminating barriers would include items such as making the hearing process unnecessarily complicated, less intimidating and more accessible to all interested parties. In 2002, the Board has:

- utilized a flexible hearing process as a result of consultation with interested parties. This includes holding hearings in more than one location and delivering decisions in areas where there was considerable public interest and involvement in an application;
- conducted public information sessions in the vicinity of future hearing locations to explain the Board's hearing process and the public's role in the process. These sessions took place prior to hearings related to Westcoast's Grizzly Raw Transmission System expansion project and its Southern Mainline expansion project, as well as the proposed GSX Canada Pipeline project;
- implemented a plain language standard and set of directives for all Board documents including a plain language template for Hearing Orders;
- looked into ways to streamline the hearing process and make it more efficient while providing more options for public participation;
- launched its e-filing service to provide efficiencies and accessibility in filing and viewing documents pertaining to regulatory matters;
- used the Internet site as a method of obtaining public comment on consultation documents for programs, reports and regulations; and
- worked on improving its Internet site and ensuring compliance toward Government On-Line standards. An accessibility audit was conducted and steps will be taken to ensure the site is accessible to all Canadians.

INVOLVING CANADIANS

Early consultation has been used extensively throughout 2002 and has resulted in meaningful engagement with industry and non-industry stakeholders who are key to the development of Board initiatives. As well, Board hosted workshops focused on sharing information with the members of the public and industry, and to discuss issues of common interest.

Consultations

Supply and Demand Report – The Board is using a new approach in producing its upcoming report. *Canada's Energy Future: Scenarios for Supply and Demand to 2025* uses scenarios to capture a broad range of plausible outcomes for energy supply and demand in Canada. To help validate the information in the report, several series of consultations were conducted with industry. Public workshops will take place in January and February 2003 in six Canadian cities.

Damage Prevention Regulations – The Pipeline Damage Prevention Team has hosted focus groups and open houses across Canada to discuss the proposed *Damage Prevention Regulations*. Members of the public and industry provided feedback on the contents of the conceptual draft of the regulations. The new regulations will apply to pipeline companies as well as Canadians who own land crossed by a pipeline, or who undertake activities that could damage a pipeline.

Additional projects in which the Board sought public comment during development included the *Co-operation Plan for the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories* (June 2002), the Appropriate Dispute

Resolution program and monitoring of the Maritime natural gas market.



Workshops

Pipeline Public Awareness Workshop – In June 2002, the NEB hosted its fourth workshop dedicated to sharing the pipeline industry's damage prevention and public awareness best practices. "Awareness 2002" was held in Halifax, Nova Scotia. It included a full day on continuing

education and liaison programs, which relate primarily to informing the public and emergency responders of their roles in the event of a pipeline-related emergency. The workshop drew over 115 attendees.

Spring Workshop – This workshop was held in June in Calgary, Alberta. It focused on explaining and refining the Board's audit program, as well as refining various documents including the GFR, the proposed *Damage Prevention Regulations* and the draft *Guidance Notes for the Design, Construction, Operation and Abandonment of Pressure Vessels and Pressure Piping*. More than 200 stakeholders attended the Calgary workshop.

REACHING CANADIANS

Public Information Services

The Board employs a variety of communications tools to facilitate communication with targeted and broader publics. The Board believes that stakeholders should have access to quality information that is timely, relevant and easy to understand. The Board continually works toward improving its communication tools, adapting them to the changing needs of the public. Current communications tools include:

Internet site

The Board Internet site offers the public access to the Board's mandate, energy market assessment reports and general information publications, statistical information, and information on frontier lands, pipeline safety and tolls. Information pertaining to regulatory proceedings, including news releases, hearing orders, transcripts of public hearings, reasons for decisions and the monthly *Regulatory Agenda*, are also updated and posted on the Internet site.

In the past year, the Board has offered the public the option of providing comments electronically on projects such as regulation revisions and draft Energy Market Assessments.

News Releases

In 2002, the Board issued 46 news releases. The Board uses news releases to relay information pertaining to applications, public hearings, emerging publications as well as invitations to public consultations, workshops and information sessions. NEB news releases are distributed through a national newswire service. They are also posted on the Internet site and are available through the NEB library.

Regulatory Agenda

This "newsletter" provides the public with a one-stop source of the Board's monthly activities. It includes hearing and non-hearing applications, amendments to regulations and guidelines, administrative matters and general interest information. It is available through the Internet site and the Board library.

Information Series

The Board is continuing to update its publications to provide accurate, easy to understand and quality information for the public. This Information Series (previously known as Information Bulletins) will cover an array of topics that range from general information to a comprehensive landowners' guide.

In 2002, the Board published several information pieces including *Answers to your Questions; the National Energy Library and Information Services*, and the *Frontier Information Office*.

Electronic filing (e-filing)

This year marked the launch of the Board's e-filing system "Livelihood". Livelihood allows the public the convenience of viewing regulatory documents as well as submitting documents electronically. This year more than 3 000 documents were filed with the Board, one-third of these using the Board's e-filing system.

Toll free number

The Board offers Canadians use of its toll-free number to facilitate personal interaction with Board staff in an effort to address specific needs or concerns. In 2002, more than 5 000 calls were received on the toll-free line, an increase of more than 1 200 calls from the previous year.

All calls, including those on the toll-free and the direct line, are an indication of the volume of interaction the Board has with stakeholders and members of the public on an annual basis.

a wealth of experience

As of 31 December 2002, Board membership consisted of seven full-time members who were appointed based upon their wide range of expertise in energy matters and public policy. Our multi-disciplinary team reflects the diverse perspectives and the practical knowledge required for making decisions on energy projects in the interests of Canadians and for advising the Government of Canada on energy issues. Members have private and public sector experience in economics, engineering, environment, finance, law, public participation, safety and science.



Kenneth W. Vollman

A native of Saskatchewan, Mr. Vollman has a Master's degree in Mechanical Engineering from the University of Saskatchewan and is a member of the Association of Professional Engineers of Alberta. Mr. Vollman has spent his career working in the energy sector, gaining his practical experience with oil and gas production while working in the private sector. During his career at the NEB, Mr. Vollman gained experience in energy supply and demand, pipelines, energy regulatory issues and management. In 1998, he was designated as Chairman after serving as a Member and Vice-Chairman. Over the past 35 years, Mr. Vollman has authored and presented numerous papers at Canadian and international conferences.



Jean-Paul Théorêt

A native of Quebec, Mr. Théorêt has a diverse educational and professional background in business, economics, law and energy regulation. Mr. Théorêt was a Commissioner of the Régie de l'énergie in Quebec for eight years. He was elected to the Quebec National Assembly in 1985 where he served as Parliamentary Assistant to the Minister of Industry, Trade and Technology as well as Vice Chairman of the Committee on Labour and the Economy. Mr. Théorêt has 30 years of business experience serving as an Executive Vice President of a large food distribution company and owner of food stores in Quebec. A member of the NEB since 1999, he was designated Vice-Chairman in 2002.

Judith A. Snider¹

Ms. Snider holds a Bachelor of Laws degree from the University of Calgary and a Bachelor of Science degree (mathematics) from Carleton University. She has been a member of the Alberta bar since 1982.



Rowland J. Harrison

Originally from Australia, Mr. Harrison has a Master of Laws degree from the University of Alberta and is a member of the bars of Nova Scotia, Ontario and Alberta. He has gained extensive advisory, consulting and research experience in various aspects of energy regulation and policy during his career.

As a Professor of Law at various Canadian universities, Mr. Harrison taught Oil and Gas Law, Advanced Petroleum Law, Constitutional Law and Administrative Law. He has held senior management positions with a number of organizations including the Canada Oil and Gas Lands Administration, the Canadian Institute of Resources Law, the Institute for Research on Public Policy and the Dalhousie Institute of Environmental Studies. Most recently, he was a partner in the Calgary office of Stikeman Elliott, a national and international Canadian law firm.



John S. Bulger

Originally from Manitoba, Dr. Bulger has a Ph.D. in Physical Chemistry from York University in Toronto, as well as a Graduate Management Diploma from McGill University in Montreal. He has experience in procurement, operations, planning, regulatory affairs and providing advice on energy issues. Prior to being appointed to the Board, he held the position of Senior Manager, Regulatory Affairs at Maritimes and Northeast Pipeline in Halifax, Nova Scotia. He also spent almost 20 years at Gaz Métropolitain in various senior management positions. He began his career at DuPont of Canada Ltd. Dr. Bulger is a member of the Chemical Institute of Canada.



¹ Ms. Snider was appointed a Judge of the Federal Court of Canada, Trial Division, in October 2002 and resigned from the Board at that time.



Elizabeth (Liz) Quarshie

Originally from Ghana, Ms. Quarshie has a Master's Degree in Environmental Engineering from Washington State University. She is a member of the Association of Professional Engineers and Geoscientists of Saskatchewan and is a Certified Professional Environmental Auditor.

Ms. Quarshie has more than 15 years experience in the energy sector and has held a portfolio of senior management positions at Cogema Resources Inc. and Cameco in Saskatoon, and directed programs such as occupational health and safety, environmental impact assessments, compliance and public affairs. She has extensive industry experience in project planning and design, development, implementation, monitoring and decommissioning. Ms. Quarshie also has experience in radiation protection, air pollution control, solid and hazardous waste management, water and wastewater treatment, research and evaluation, environmental management systems, audits and community development.



Deborah W. Emes

Originally from Saskatchewan, Ms. Emes has a Master of Arts in Economics from the University of Calgary and is a Chartered Financial Analyst. She has practical and academic expertise in providing regulatory, economic and market advice. Ms. Emes has held positions in the public and private sectors, including Manager, Strategic Services for the British Columbia Utilities Commission. She has taught rate design and cost of capital training seminars for the Canadian Association of Members of Public Utility Tribunals.



Carmen L. Dybwad

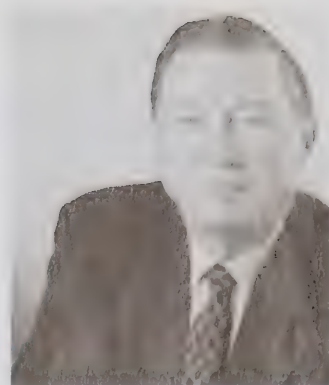
A native of Saskatchewan, Dr. Dybwad has a Ph.D. in Regional Planning and Resource Development from the University of Waterloo. She has an educational background in economics as well as practical and academic expertise in public participation, resource development and the electricity sector. Dr. Dybwad has held several positions with the Government of Saskatchewan and the Saskatchewan Power Corporation, including Manager of Environmental Policy and Planning. Most recently, she was an assistant professor at the University of Regina where she taught classes in ecological economics, sustainable development and public administration.

Bryan Williams

On 18 September 2001, the Honourable Bryan Williams was appointed as a temporary Board Member for the purpose of matters related to the Joint Panel Review of the GSX Canada Pipeline Project.

Gaétan Caron

In 2002, Mr. Caron was appointed as a temporary Board Member for a term of two years. Originally from Quebec, Mr. Caron obtained his Bachelor of Applied Sciences degree from Laval University and his Master of Business Administration degree from the University of Ottawa. Mr. Caron joined the NEB in 1979, where he has held several senior positions, most recently as Chief Operating Officer, a position he continues to occupy. Mr. Caron is a member of the Association of Professional Executives of the Public Service of Canada and is a member of the Quebec Order of Engineers. He is also a member of the Board of Directors of the Calgary United Way.



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ACTS

National Energy Board Act
Canada Labour Code, Part II
Canada Oil and Gas Operations Act
Canada Petroleum Resources Act
Canadian Environmental Assessment Act
Energy Administration Act
Mackenzie Valley Resource Management Act
Northern Pipeline Act

REGULATIONS AND ORDERS PURSUANT TO THE NATIONAL ENERGY BOARD ACT

Gas Pipeline Uniform Accounting Regulations
National Energy Board Act Part VI (Oil and Gas) Regulations
National Energy Board Cost Recovery Regulations
National Energy Board Electricity Regulations
National Energy Board Export and Import Reporting Regulations
National Energy Board Order No. M0-62-69
National Energy Board Pipeline Crossing Regulations, Part I
National Energy Board Pipeline Crossing Regulations, Part II
General Order No. 1 Respecting Standard Conditions for Crossings by Pipelines
General Order No. 2 Respecting Standard Conditions for Crossings of Pipelines
National Energy Board Rules of Practice and Procedure, 1995
National Energy Board Substituted Service Regulations
Oil Pipeline Uniform Accounting Regulations
Oil Product Designation Regulations
Onshore Pipeline Regulations, 1999
Pipeline Arbitration Committee Procedure Rules, 1986
Power Line Crossing Regulations
Proclamation Extending the Application of Part VI of the Act to Oil (May 7, 1970)
Regulations amending the *National Energy Board Cost Recovery Regulations* (SOR/2002-375)
21 October 2002
Toll Information Regulations
Section 58 Streamlining Order XG/XO-100-2002

GUIDELINES AND MEMORANDA OF GUIDANCE PURSUANT TO THE NATIONAL ENERGY BOARD ACT

- Adherence to Environmental Information Requirements under the Board's Guidelines for Filing Requirements (23 December 1997)
- Consultation with Aboriginal Peoples: National Energy Board Memorandum of Guidance, (4 March 2002)
- Filing of Supply Information in Compliance with the Board's Part VI (Oil and Gas) Regulations (16 May 1997)
- Filing Procedures for Section 104 Right of Entry Order Applications (27 October 1999)
- Financial Regulatory Audit Policy of the National Energy Board (23 February 1999)
- Guidance Notes for the *Onshore Pipeline Regulations*, 1999 (7 September 1999)
- Guidelines for Filing Requirements (22 February 1995)
- Guidelines for Negotiated Settlement of Traffic, Tolls and Tariffs (12 June 2002)
- Guidelines Respecting the Environmental Information to be Filed by Applicants for Authorization to Construct and Operate Gas Processing and Straddle Plants, Liquid Natural Gas (LNG) Plants and Terminals, Natural Gas Liquids (NGL), Liquid Propane Gas (LPG) and Butane Plants and Terminals, under Part III of the *National Energy Board Act* (26 June 1986)
- Investigative Digs and Related Pipeline Repairs/Replacements (2 December 2002)
- Memorandum of Guidance - Electronic Filing, *National Energy Board Rules of Practice and Procedure*, 1995 (21 March 2002)
- Memorandum of Guidance - Concerning Full Implementation of the September 1988 Canadian Electricity Policy (Revised 26 August 1998)
- Memorandum of Guidance - Fair Market Access Procedure for the Licensing of Long-term Exports of Crude Oil and Equivalent (17 December 1997)
- Memorandum of Guidance - Regulation of Group 2 Companies (6 December 1995)
- Memorandum of Guidance - Retention of Accounting Records by Group 1 Companies Pursuant to Gas/Oil Pipeline Uniform Accounting Regulations (30 November 1994)
- Memorandum of Guidance - Financial Information Submitted to the National Energy Board by Group 1 Pipeline Companies (6 December 2001)
- National Energy Board Expected Elements for Emergency Preparedness and Response Programs (24 April 2002)
- Performance Measures filed as part of Year-end Quarterly Surveillance Reports (26 January 1996)

REGULATIONS PURSUANT TO THE CANADA OIL AND GAS OPERATIONS ACT

- Canada Oil and Gas Certificate of Fitness Regulations*
- Canada Oil and Gas Diving Regulations*
- Canada Oil and Gas Drilling Regulations*
- Canada Oil and Gas Geophysical Operations Regulations*
- Canada Oil and Gas Installations Regulations*

Canada Oil and Gas Operations Regulations
Canada Oil and Gas Production and Conservation Regulations
Oil and Gas Spills and Debris Liability Regulations

GUIDELINES AND GUIDANCE NOTES PURSUANT TO THE CANADA OIL AND GAS OPERATIONS ACT

Guidance Notes for Applicant - Applications for Declaration of Significant Discovery and Commercial Discovery
Guidance Notes for the *Canada Oil and Gas Drilling Regulations*
Guidance Notes for the *Canada Oil and Gas Diving Regulations*
Guidelines Respecting Physical Environmental Programs During Petroleum Drilling and Production Activities on Frontier Lands
Offshore Waste Treatment Guidelines

REGULATIONS PURSUANT TO THE CANADA PETROLEUM RESOURCES ACT

Frontier Lands Petroleum Royalty Regulations
Frontier Lands Registration Regulations

REGULATIONS PURSUANT TO THE CANADIAN ENVIRONMENTAL ASSESSMENT ACT

Comprehensive Study List Regulations
Exclusion List Regulations
Federal Authorities Regulations
Inclusion List Regulations
Law List Regulations
Projects Outside Canada Environmental Assessment Regulations
Regulations Respecting the Co-ordination by Federal Authorities of Environmental Assessment Procedures and Requirements

REGULATIONS PURSUANT TO THE CANADA LABOUR CODE, PART II

Oil and Gas Occupational Safety and Health Regulations
Safety and Health Committees and Representatives Regulations
Canada Occupational Safety and Health Regulations

REGULATIONS PURSUANT TO THE MACKENZIE VALLEY RESOURCES MANAGEMENT ACT

Exemption List Regulations
Mackenzie Valley Land Use Regulations
Preliminary Screening Requirement Regulations

REGULATIONS PURSUANT TO THE NORTHERN PIPELINE ACT

Northern Pipeline Act and Regulations

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for
Southern British Columbia

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the
Province of Alberta

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the
Province of Saskatchewan

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for
Southern British Columbia

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the
Swift River Portion of the Pipeline in the Province of British Columbia

Order Designating the Minister for International Trade as Minister for Purposes of the
Act

Transfer of Duties, in Relation to the Pipeline, of Certain Ministers Under Certain Acts to
the Member of the Queen's Privy Council for Canada Designated as Minister for
Purposes of the Act

Transfer of Duties, in Relation to the Pipeline, of the National Energy Board Under Parts
I, II and III of the *Gas Pipeline Regulations* to the Designated Minister for Purposes of
the Act

Transfer of Powers, Duties and Functions (Kluane National Park Reserve Lands) Order

Transfer of Powers, Duties and Functions (Territorial Lands) Order

REGULATIONS PURSUANT TO THE TERRITORIAL LANDS ACT

Canada Oil and Gas Land Regulations

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COMPANIES REGULATED BY THE NEB

The following pipeline companies and electric power entities own or operate interprovincial or international pipelines or power lines under the NEB's jurisdiction, as of 31 December 2002. The pipeline companies have been divided into two groups. Group 1 gas and oil pipelines are the major pipeline companies subject to active regulatory oversight by the NEB. Group 2 consists of all other pipeline companies under the NEB's jurisdiction.

For purposes of cost recovery, there are three classifications for companies: large, intermediate and small. The criteria for determining a company's classification are based on its size, throughput, and cost of service.

Group 1 Gas Pipelines

Alliance Pipeline Ltd.
Foothills Pipe Lines Ltd.
Gazoduc Trans Québec & Maritimes
Inc.
Maritimes and Northeast Pipeline
Management Ltd.
TransCanada PipeLines Limited
TransCanada PipeLines Limited, B.C.
System
Westcoast Energy Inc.

Group 1 Oil and Products Pipelines

Cochin Pipe Lines Ltd.
Enbridge Pipelines Inc.
Enbridge Pipelines (NW) Inc.
Terasen Pipelines (Trans Mountain)
Inc.
Trans-Northern Pipelines Inc.

Group 2 Gas Pipelines

AltaGas (Sask) Inc.
AltaGas Services Inc.
AltaGas Transmission Ltd.
ANG Gathering & Processing Ltd.

Barrington Petroleum Ltd.
Bear Paw Processing Company
(Canada) Ltd.
Bellator Exploration Inc.
Berkley Petroleum Corp.
Canada Customs and Revenue Agency
Canadian Hunter Exploration Ltd.
Canadian-Montana Pipe Line
Corporation
Canadian Natural Resources Limited
Centra Transmission Holdings Inc.
Champion Pipeline Corporation
Limited
Chief Mountain Gas Co-op Ltd.
DEFS Canada L.P.
Devon Energy Canada Corporation
ELAN Energy Inc.
Enbridge Gas Distribution Inc.
EnCana Border Pipelines Limited
EnCana Corporation
EnCana Oil & Gas Partnership
EnCana Suffield Gas Pipeline Inc.
EnCana West Ltd.
ExxonMobil Canada Ltd.
Fletcher Challenge Oil and Gas Inc.
Forty Miles Gas Co-op Ltd.
Gibson Petroleum Company Limited

Huntingdon International Pipeline Corporation
 Husky Oil Operations Ltd.
 KeySpan Energy Canada Inc.
 Many Islands Pipe Lines (Canada) Limited
 Mid-Continent Pipelines Limited
 Minell Pipeline Limited
 Murphy Canada Exploration Company
 Murphy Oil Company Ltd.
 Niagara Gas Transmission Limited
 Northstar Energy Corporation
 Olympia Energy Inc.
 Peace River Transmission Company Limited
 Penn West Petroleum Ltd.
 Pioneer Natural Resources Canada Inc.
 Portal Municipal Gas Company Canada Inc.
 Rigel Oil and Gas Ltd.
 St. Clair Pipelines Management Inc.
 Samson Canada Ltd.
 SCL Pipeline Inc.
 Shell Canada Products Limited
 Shiha Energy Transmission Ltd.
 Star Oil and Gas Ltd.
 Suncor Energy Inc.
 Talisman Energy Inc.
 Taurus Exploration
 Union Gas Limited
 Vector Pipeline Limited Partnership
 Westminster Resources Ltd.
 167496 Canada Ltd.

Group 2 Oil and Products

Aurora Pipe Line Company
 BP Canada Energy Company
 ConocoPhillips Canada Limited
 Dome Kerrobert Pipeline Ltd.
 Dome NGL Pipeline Ltd.
 Enbridge Pipelines (Westspur) Inc.
 Ethane Shippers Joint Venture
 Express Pipeline Limited Partnership
 Genesis Pipeline (Canada) Ltd.
 Husky Energy Inc.
 Husky Oil Operations Ltd.
 Imperial Oil Resources Limited

ISH Energy Ltd.
 Manito Pipelines Ltd.
 Montreal Pipe Line Limited
 Murphy Oil Company Ltd.
 Nexen Marketing
 NOVA Chemicals (Canada) Ltd.
 PanCanadian Kerrobert Pipeline Ltd.
 Paramount Transmission Ltd.
 Pembina Pipeline Corporation
 Penn West Petroleum Ltd.
 Plains Marketing Canada, L.P.
 PMC (Nova Scotia) Company
 Pouce Coupé Pipe Line Ltd. as an agent
 and general partner of Pembina
 North Limited Partnership
 PrimeWest Energy Inc.
 SCL Pipeline Inc.
 Sun-Canadian Pipe Line Company Limited
 Sunoco Pipeline L.P.
 Williams Energy (Canada), Inc.
 Yukon Pipelines Limited

Commodity Pipelines

Abitibi-Consolidated Company of Canada
 E.B. Eddy Forest Products Ltd.
 Fraser Paper Inc. (Canada)
 Genesis Pipeline Canada Ltd.
 Penn West Petroleum Ltd.
 Souris Valley Pipeline Limited

Electric Power Utilities

Abitibi-Consolidated Inc.
 Advantage Energy Inc.
 Aquila Merchant Services
 Aquila Networks Canada (BC) Ltd.
 ATCO Electric Ltd. and ATCO Power Ltd.
 Bonneville Power Administration
 BP Canada Energy Company
 British Columbia Hydro and Power
 Authority
 Canadian Niagara Power Company Limited
 Canadian Niagara Power Inc.
 The Canadian Transit Company
 Candela Energy Corporation

Cargill-Alliant Energy Canada Inc.
 Cedars Rapids Transmission Co.
 Chandler Energy Inc.
 CMS Marketing, Services and Trading
 Company
 Columbia Power Corporation
 Conectiv Energy Supply Inc.
 Constellation Power Source, Inc.
 Consumers Energy Company
 Coral Energy Canada Inc.
 Detroit & Canada Tunnel Corporation
 The Detroit & Windsor Subway Company
 The Detroit Edison Company
 Direct Energy Marketing Limited
 DTE Energy Trading Inc.
 Duke Energy Marketing Canada Ltd.
 Dynegy Canada Inc.
 Dynegy Power Marketing Inc.
 Edison Mission Marketing & Trading, Inc.
 El Paso Merchant Energy, L.P.
 Emera Energy Inc.
 EnCana Energy Services Inc.
 Engage Energy Canada, L.P.
 Engage Energy US, L.P.
 ENMAX Energy Marketing Inc.
 Entergy Power Marketing Corp.
 Entergy-Koch Trading Canada (ULC)
 EPCOR Merchant and Capital Inc.
 Exelon Generation Company, LLC
 Farms (including cottage and isolated
 loads)
 Fraser Paper Inc. (Canada)
 Hydro One Networks Inc.
 Hydro-Québec
 IDACORP Energy L.P.
 Independent Electricity Market Operator
 Inland Pacific Energy Services Ltd.
 Lac La Croix Power Authority
 Manitoba Hydro

Marketing D'Énergie HQ Inc.
 Mirant Americas Energy Marketing, L.P.
 Montwegan International Energia Resource
 Inc.
 Morgan Stanley Capital Group Inc.
 New Brunswick Power Corporation
 Nexen Marketing
 NorthPoint Energy Solutions Inc.
 Nova Scotia Power Inc.
 NRG Power Marketing, Inc.
 OGE Energy Resources Inc.
 Ontario Power Generation Inc.
 Ontario Power Interconnected Markets Inc.
 PDI Canada Inc.
 PG&E Energy Trading - Power L.P.
 Powerex Corp.
 Reliant Energy Services Canada Ltd.
 Roseau Electric Cooperative Inc.
 Saskatchewan Power Corporation
 Sempra Energy Trading Corp.
 Sonat Power Marketing Inc.
 Sonat Power Marketing, L.P.
 Split Rock Energy LLC
 Teck Cominco Metals Ltd.
 Tractebel Energy Marketing Inc.
 TransAlta Energy Marketing Corp.
 TransAlta Energy Marketing Corp. and
 TransAlta Energy Marketing (U.S.)
 Inc.
 TransCanada Energy Ltd.
 TransCanada Power Marketing Inc.
 UBS AG. London Branch
 UtiliCorp Networks Canada (British
 Columbia) Ltd.
 West Kootenay Power Ltd.
 Williams Energy Marketing & Trading
 Canada Inc.
 WPS Canada Generation, Inc.

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DOCUMENTS

Information Bulletins

The Board publishes Information Bulletins on the subjects listed below:

- I. Pipeline Route Approval Procedures
- II. The Public Hearing Process
- III. Non-Hearing Procedures
- IV. How to Participate in a Public Hearing
- V. The Board's Publications (replaced by Information Series #2)
- VI. Traffic, Tolls and Tariffs
- VII. The National Energy Board Library (replaced by Information Series #2)
- VIII. Electricity
- IX. Protection of the Environment
- X. Pipeline Tolls and Tariffs: A Compendium of Terms
- XI. The Frontier Information Office (replaced by Information Series #3)
- XII. Pipeline Safety
- XIII. Pipeline Regulation: An Overview for Landowners and Tenants

The Board also publishes the following brochures:

Living and Working Near Pipelines - Landowner Guide 2002
Excavation and Construction Near Pipelines, January 2002

Information Series

The Board publishes the following Information Series:

1. Answers to your Questions
2. Library and Information Services
3. Frontier Information Office

MAJOR DOCUMENTS PUBLISHED IN 2002

International Power Lines

Manitoba Hydro Electric Board
Authorization to construct and
operate an international power
line
Decision, 6 March 2002

Cedars Rapids Transmission Co.
Authorization to reconstruct a
section of its existing international
powerline
EH-1-2002
Reasons for Decision, June 2002

Pipeline Facilities

- TransCanada PipeLines Limited
Facilitator's Report of Technical
Conference, 7 February 2002
Facilities Deactivation Application
Section 44 of the *Onshore Pipeline
Regulations*,
Georgia Strait Crossing Pipeline Limited
GSX Canada pipeline project
Oral argument on motion
GH-4-2001
Decision, 31 May 2002
Canadian Natural Resources Limited
CNRL Ladyfern Pipeline
Decision, 18 december 2001
Statement of Dissent - Member E.
Quarshie, 13 June 2002
Westcoast Energy Inc.
Grizzly extension pipeline and
Weejay lateral
GH-2-2002
Comprehensive Study Report,
August 2002
Westcoast Energy Inc.
Grizzly extension pipeline and the
Weejay lateral
GH-2-2002
Reasons for Decision, November
2002

Tolls and Tariffs

- TransCanada PipeLines Limited
Fair return application
RH-4-2001
Reasons for Decision, June 2002

Gas Exports

- Province of New Brunswick
Respecting short-term export order
procedures
MH-2-2002
Reasons for Decision, September
2002

Electricity

- TransCanada Power Marketing Inc.
Electricity Export
Letter Decision, 8 March 2002
EPCOR Merchant and Capital Inc. on
behalf of EPCOR Merchant and
Capital L.P.
Electricity Export
Letter Decision, 18 March 2002
Nexen Marketing
Electricity Export
Letter Decision, 18 March 2002
Aquila Capital and Trade Limited
Electricity Export
Letter Decision, 21 March 2002
Aquila Canada Capital and Trade Corp.
Electricity Export
Letter Decision, 21 March 2002
OGE Energy Resources, Inc.
Electricity Export
Letter Decision, 5 April 2002
Direct Energy Marketing Limited
Electricity Export
Letter Decision, 12 April 2002
Reliant Energy Services Canada Ltd.
Electricity Export
Letter Decision, 12 April 2002
The Detroit Edison Company
Electricity Export
Letter Decision, 25 April 2002
DTE Energy Trading Inc.
Electricity Export
Letter Decision, 25 April 2002
Cargill-Alliant Energy Canada, Inc.
the general partner of Cargill-Alliant
Energy Canada, LP
Electricity Export
Letter Decision, 2 May 2002

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LEGAL PROCEEDINGS

1. Geophysical Services Incorporated v. The Chairman, National Energy Board and Information Commissioner of Canada

Federal Court Trial Division

In November of 2000, the Board was served with a judicial review application with respect to a denial pursuant to an Access to Information request. The judicial review application stated that the Board erred in concluding that the disclosure of the information requested could reasonably be expected to result in material financial loss, or prejudice the competitive position of a third party.

Decision: This matter has been set down to be heard in Halifax, Nova Scotia on 5 February 2003.

2. Federation of Saskatchewan Indian Nations; The Chiefs of Treaty No. 4 and Treaty No. 8 (FSIN) v. Alliance Pipelines Ltd.

Federal Court of Appeal

On 2 May 2001, FSIN brought an application for judicial review of the NEB's decision of 2 April 2001 to deny FSIN's request that the Board convene a hearing to consider revocation or suspension of the Certificate of Public Convenience and Necessity (GC-98) issued to Alliance. FSIN claimed that Alliance had contravened a term or condition of the certificate.

On 16 April 2002, the Federal Court of Appeal granted a motion by FSIN to amend its application for judicial review. The amendment added a request for judicial review of the NEB's decision of 23 November 1998 (approved by the Governor in Council on 23 December 1998) to grant GC-98. The grounds for the added request included that the NEB failed to properly exercise its jurisdiction by issuing GC-98 without including revenue sharing as a term of GC-98 as mentioned in a Memorandum of Understanding between FSIN and Alliance.

Decision: As of 31 December 2002, this matter had yet to be set down for hearing.

3. Maritimes & Northeast Pipeline Management Ltd. (M&NP) v. National Energy Board

Federal Court of Appeal

On 14 February 2002, M&NP brought an application for leave to appeal the NEB's decision of 15 January 2002 to set down for public hearing a request by Cartier Pipeline and Company, Limited Partnership (Cartier). By Hearing Order RH-3-2001, Phase 2, the Board set down for consideration the appropriate toll treatment of the Northwest Facilities. The Northwest

Facilities consist of a hypothetical pipeline approximately 260 kilometers in length extending from an interconnection with the proposed Cartier Pipeline Project through north-west New Brunswick to M&NP's existing mainline near Fredericton.

The grounds for the application for leave to appeal included assertion that the Board erred in directing a hearing for the determination of tolling methodology for facilities for which no application to construct had been filed with the Board and in purporting to exclude certain matters from consideration at the hearing.

Decision: On 22 February 2002, following withdrawal of the Cartier request for hearing and the Board's resultant termination of the RH-3-2001 Phase 2 proceeding, M&NP discontinued its application for leave to appeal.

4. Canadian Association of Petroleum Producers (CAPP) - Hearing Order RH-3-2001 Phase 2, Regarding Cartier Request for Tolling Determination [for the Northwest Facilities]

Review by NEB

On 28 January 2002, CAPP applied for a review and stay of the Board's decision of 15 January 2002 to set down for public hearing a request by Cartier for the Board's consideration of the appropriate toll treatment of the Northwest Facilities (the facilities are described in item 3 above).

Decision: On 21 February 2002, following withdrawal of the Cartier request for hearing and the Board's resultant termination of the RH-3-2001 Phase 2 proceeding, the Board discontinued its consideration of the review application.

5. Westcoast Energy Inc. - Order approving construction of the Kwoen Facilities

Review by NEB

On 27 September 2001, the Board decided, on its own motion, to conduct a review of its order approving the construction of Westcoast's Kwoen facilities. On 19 September 2001, Westcoast had informed the Board that it had identified problems with Talisman Energy Inc.'s re-injection well located at b-65-B/93-p-5 (b-65 well) and that the connection of the Kwoen facilities as approved by XG-W005-22-2001 to the b-65 well appeared to be in serious doubt. The Board noted that the b-65 well is fundamental to the operation of the Kwoen facilities as approved. In the absence of a connection between the Kwoen re-injection pipeline and the b-65 well, the viability of the Kwoen project and other projects related to it may be in question.

Decision: On 19 April 2002, the Board completed its review by amending the original order, which effectively approved the facilities.

6. *Reservoir Safety Committee (RSC) - Review of Electricity Export Permits Issued to British Columbia Power Exchange Corporation (Powerex) and British Columbia Hydro and Power Authority (BC Hydro)*

Review by NEB

On 17 October 2000, RSC applied for a review of electricity export permits EPE-118 and EPE-119 issued to Powerex and permits EPE-124, EPE-125, EPE-126 and EPE-127 issued to BC Hydro. In its application, RSC stated that since 1980, 11 drownings had occurred in BC Hydro's Carpenter Reservoir, which supplies the Bridge River Hydroelectric Facility, as a consequence of BC Hydro's refusal to provide adequate protection to workers and members of the public travelling near the reservoir. RSC requested that the Board rescind permits related to the export of electricity generated through the Bridge River Facility until such time as the safety of workers and the traveling public can be assured. In December of 2001, the Board advised RSC that it would not consider the application for review until RSC had notified interested parties of the application.

In April of 2002, RSC renewed its application for a review of these permits and notified interested parties. On 10 June 2002, the Board sought submissions from BC Hydro and Powerex on the Board's authority under subsection 21(1) of the *National Energy Board Act* to rescind electricity export permits. On 24 June 2002, BC Hydro and Powerex responded, in part, with a request that the Board conclude that it has no jurisdiction to grant RSC the relief it sought.

Decision: On 7 August 2002, RSC informed the Board that it did not wish to pursue its application for the rescission of the electricity export permits currently held by BC Hydro and Powerex.

7. *Trans Mountain Pipe Line Company Ltd. (TMPL) - Order Approving Toll Settlement*

Review by NEB

On 19 March 2002, TMPL applied for review and variance of Order TO-1-2001 by which the Board approved TMPL's Incentive Toll Settlement for the years 2001 to 2005. The review application was filed because of the company's understanding that condition 6 of the Order required TMPL to immediately comply with the revised surveillance reporting requirements of Part XI of the Guidelines for Filing Requirements issued by the Board on 6 December 2001. Condition 6 of the Order provided as follows:

TMPL is relieved from all reporting and filing requirements pursuant to Order TO-3-92 and the Memorandum of Guidance dated 16 February, related to quarterly surveillance reports pending the outcome of the Board's examination of appropriate filing requirements for pipeline[s] operating under an incentive toll settlement.

Decision: On 31 May 2002, the Board dismissed the application for review and variance on the basis that the Board had not made an interpretation of condition 6 of the Order which would require immediate compliance with the revised surveillance reporting requirements.

8. TransCanada Pipelines Limited - Tolls Decisions

Review by NEB

On 16 September 2002, TransCanada applied to the Board for a review and variance of Board decision RH-4-2001 and the implementing orders. TransCanada claimed that the Board committed errors in the RH-4-2001 Decision when it:

- breached its legal obligation to apply the fair return standard;
- improperly applied the comparable investment, capital attraction and financial integrity standards;
- misinterpreted the ATWACC proposal;
- continued the application of the RH-2-94 Formula for determination of return on equity;
- violated the stand-alone principle; and
- breached the duty of fairness by failing to provide adequate reasons for many of its decisions.

On 1 November 2002, the Board solicited comments from the parties to RH-4-2001 on whether or not TransCanada has raised a doubt as to the correctness of the Decision which would require a review. The filing of documents, including TransCanada's reply, was completed by 17 December 2002.

Decision: The matter remains under Board consideration.

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CO-OPERATION WITH OTHER ORGANIZATIONS

The NEB co-operates with other agencies to reduce regulatory overlap and provide more efficient regulatory services.

Alberta Energy and Utilities Board (EUB)

The NEB has a Memorandum of Understanding (MOU) with the EUB on Pipeline Incident Response. The agreement provides for mutual assistance and a faster and more effective response by both boards to pipeline incidents in Alberta.

The NEB and the EUB maintained their commitment to using the common reserves database for oil and gas reserves in Alberta. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for co-operation. Currently the Boards are working on a new assessment of gas resources in Alberta. The NEB and the EUB are organizing and planning to jointly host the 2003 CAMPUT conference "Market in Transition - The Changing Face of Regulation" (see CAMPUT below).

British Columbia Ministry of Energy and Mines (BCMÉM)

The NEB and BCMÉM maintained their commitment to using a common reserves database for oil and gas reserves in British Columbia. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for co-operation.

Canada-Newfoundland Offshore Petroleum Board (C-NOPB) and Canada-Nova Scotia Offshore Petroleum Board (C-NSOPB)

The Chairs of the NEB, the C-NOPB and the C-NSOPB, together with executives from the Newfoundland, Labrador and Nova Scotia Departments of Energy and NRCan, form the Oil and Gas Administrators Advisory Council (OGAAC). The OGAAC membership discuss and decide on horizontal issues affecting their respective organizations to ensure convergence and collaboration on oil and gas exploration and production issues across Canada. The NEB, C-NOPB and C-NSOPB staff also work together to review, update and amend regulations and guidelines affecting oil and gas activities on Accord Lands.

NEB staff also provides technical expertise to NRCan, C-NOPB and C-NSOPB on technical matters of mutual interest, such as reservoir assessment, occupational safety and health, diving, drilling and production activities.

In 2002, the NEB and C-NSOPB signed an MOU to co-ordinate the regulatory review of the EnCana Deep Panuke Offshore Gas Development project.

Canadian Association of Members of Public Utility Tribunals (CAMPUT)

CAMPUT is a non-profit organization of federal, provincial and territorial boards and commissions which are responsible for the regulation of the electric, water, gas and pipeline utilities in Canada. Members sit on the executive committee of the association, promoting the education and training of members and staff of public utility tribunals. The NEB also provides staff support to CAMPUT in the form of information provision and assistance in conference organization. During 2002, NEB Board Members and staff attended the Annual CAMPUT conference.

Canadian Environmental Assessment Agency (CEAA)

NEB staff is actively engaged with CEAA matters, participating in CEAA's Senior Management Committee and acting as an observer on the Regulatory Advisory Committee. This involvement ensures effective co-ordination of regulatory responsibilities relating to environmental assessments.

Comisión Reguladora de Energía (CRE) of Mexico

Staff at the NEB and CRE maintain an ongoing informal relationship, sharing regulatory experiences and information on North American energy markets. Both organizations are committed to continuing and strengthening this relationship, which includes inter-agency staff visits.

Co-operation on the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories

In 2002, the NEB, in collaboration with the boards and agencies responsible for environmental impact assessment and regulatory review of a major natural gas pipeline through the Northwest Territories, issued a Co-operation Plan. This plan describes how the agencies propose to co-ordinate their activities to ensure an efficient, flexible and timely process that reduces duplication and enhances public and northern participation in the review of a major pipeline application. The NEB's partners in the Plan include the Mackenzie Valley Land and Water Board, the Sahtu and Gwich'in Land and Water Boards, the NWT Water Board, the Mackenzie Valley Environmental Impact Review Board, the Environmental Impact Screening Committee and the Environmental Impact Review Board for the Inuvialuit Settlement Region, the Inuvialuit Game Council, the Inuvialuit Land Administration, the Canadian Environmental Assessment Agency, the Department of Indian Affairs and Northern Development, and observers from the Deh Cho First Nation, the Government of the Northwest Territories, and the Government of Yukon.

Human Resources Development Canada (HRDC)

The NEB has an MOU with HRDC to administer the *Canada Labour Code* for NEB-regulated facilities and activities and to co-ordinate these safety responsibilities under the COGO Act and the NEB Act. The NEB also participated in the HRDC client satisfaction survey.

Mackenzie Valley Environmental Impact Review Board (MVEIRB)

In late 2000, the NEB and the MVEIRB signed a joint MOU to establish a co-operative framework for environmental impact assessment in the Mackenzie Valley. In the case of transboundary pipeline projects, the NEB has responsibilities under both the *Mackenzie Valley Resource Management Act* and the CEA Act. This MOU facilitates the co-operation of two boards to reduce duplication and increase effectiveness of the environmental review process.

National Association of Regulatory Utility Commissioners (NARUC)

Board Members regularly participate in meetings of the U.S. NARUC, particularly with respect to developments in U.S. gas markets that may affect cross-border trade in natural gas.

Natural Resources Canada (NRCan)

In 1996, the NEB signed an MOU with NRCan to reduce duplication and increase co-operation between the agencies. This MOU covers items such as data collection, the enhancement of energy models and special studies. The MOU was renewed in January 2000.

Northern Pipeline Agency (NPA)

The NEB provides technical and administrative assistance to the NPA, which, under the Northern Pipeline Act, has primary responsibility for overseeing the planning and construction of the Canadian portion of the Alaska Natural Gas Transportation System by Foothills Pipe Lines Ltd. Mr. Robert G. Skinner was appointed as the Administrator of the NPA in November 2002.

Pipeline Technical Regulatory Authorities of Canada Council (PTRACC)

The NEB chairs a staff committee of federal and provincial technical regulators. PTRACC meets regularly throughout the year to discuss pipeline safety and environmental initiatives.

Transportation Safety Board of Canada (TSB)

While the NEB has exclusive responsibility for regulating the safety of oil and gas pipelines under federal jurisdiction, it shares the responsibility for investigating pipeline incidents with the TSB. The roles and responsibilities of each body with regard to pipeline accident investigations are outlined in a MOU between the two boards.

U.S. Federal Energy Regulatory Commission (FERC)

NEB and FERC executives maintain a regular dialogue on their respective regulatory experiences and exchange information available in the public domain in order to keep one another informed about current and upcoming issues which may affect both organizations, and to mutually benefit from knowledge about best regulatory practices.

Yukon Territory Department of Economic Development (DED)

The NEB continues to work with Yukon officials to facilitate the transfer of oil and gas regulatory responsibilities in accordance with the Yukon Accord Implementation Agreement. The Board provides expert technical advice to the DED.

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LIST OF APPENDICES

The following Statistical Reports are published separately as Appendices to the Annual Report. Electronic copies can be found on the Board's Internet site and printed versions are available from the Publications Office. Call (403) 299-3562 or 1-800-899-1265, send a facsimile to (403) 292-5503 or visit the Board's Internet site (www.neb-one.gc.ca).

Appendix A

- A1 Crude Oil and Equivalent Supply and Disposition
- A2 Estimated Established Reserves of Crude Oil and Bitumen at 31 December 2001
- A3 Natural Gas Supply and Disposition
- A4 Estimated Established Reserves of Marketable Natural Gas at 31 December 2001
- A5 Natural Gas Liquids Supply and Disposition
- A6 Geophysical Activity
- A7 Exploration and Development Expenditures
- A8 Sales of Exploration Rights in Western Canada
- A9 Sales of Exploration Rights in Frontier Regions
- A10 Electricity Generation and Disposition

Appendix B

- B1 Certificates Issued During 2002 Approving Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length
- B2 Orders Issued During 2002 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length
- B3 Exports of Canadian Crude Oil and Equivalent - 2001 and 2002
- B4 Exports of Canadian Crude Oil and Equivalent - 1998 to 2002
- B5 Exports of Petroleum Products by Month - 2002
- B6 Exports of Petroleum Products by Company - 2001 and 2002

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- C1 Certificates Issued During 2002 Approving the Construction of Gas Pipeline Facilities Exceeding 40 Kilometres in Length
- C2 Orders Issued During 2002 Approving the Construction of Gas Pipeline Facilities Not Exceeding 40 Kilometres in Length
- C3 Licences and Long-Term Orders to Export Natural Gas as of 31 December 2002
- C4 Licences and Long-Term Orders to Import Natural Gas as of 31 December 2002
- C5 Natural Gas Exports by Export Point - 1998 to 2002
- C6 Total Net Exports of Propane and Butanes - 2001 and 2002

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- D1 Financial Information - Group 1 Oil Pipeline Companies with Multi-Year Incentive Toll Agreements
- D2 Financial Information - Group 1 Oil Pipeline Companies with Tolls based on Cost of Service
- D3 Financial Information - Group 1 Gas Pipeline Companies

Appendix E

- E1 Certificates and Permits Issued During 2002 for International Power Lines
- E2 Amending Orders Issued During 2002 for International Power Lines
- E3 Revoking Orders Issued During 2002 for International Power Lines
- E4 Licences Issued During 2002 for the Export of Electricity
- E5 Permits and Orders Issued During 2002 for the Export of Electricity
- E6 Electricity Exports - 2002
- E7 Electricity Trade Between Canada and the United States - 2002 (by Province)
- E8 Electricity Trade between the United States and Canada - 2002 (by American Region/State)

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NEB ORGANIZATION

The NEB is structured into five business units, reflecting major areas of responsibility: Applications, Operations, Commodities, Information Management and Corporate Services. In addition, the Executive Office includes three other teams providing specialized services: Legal Services, Professional Leadership and Regulatory Services.



SENIOR BOARD STAFF

Gaétan Caron	Chief Operating Officer
Judith Hanebury	General Counsel
Sandy Harrison	Business Leader, Applications
John McCarthy	Business Leader, Operations
Terrance Rochefort	Business Leader, Commodities
Byron Goodall	Business Leader, Information Management
Valerie Katarey	Business Leader, Corporate Services

Michel Mantha	Secretary of the Board
Bonnie Gray	Project Leader, Northern Preparedness
Glenn Booth	Professional Leader, Economics
Claudine Dutil-Berry	Acting Professional Leader, Environment
Joe Paviaglaniti	Acting Professional Leader, Engineering

BUSINESS UNIT RESPONSIBILITIES

Applications

The Applications Business Unit is responsible for processing and assessing most regulatory applications submitted under the NEB Act. These fall primarily under Parts III and IV of the NEB Act, corresponding to facilities and tolls and tariffs applications. It is also responsible for other matters such as the financial surveillance and financial audits of companies under the Board's jurisdiction and addressing landowner concerns.

Commodities

The Commodities Business Unit is responsible for energy industry and marketplace surveillance, including the outlook for the demand and supply of energy commodities in Canada, updating guidelines, and regulations relating to energy exports as prescribed by Part VI of the NEB Act. It is also responsible for assessing and processing applications for oil, natural gas and electricity exports, and for the construction and operation of international and interprovincial electric power lines.

Operations

The Operations Business Unit is accountable for safety and environmental matters pertaining to facilities under the NEB Act, the COGO Act and the CPR Act. It conducts safety and environmental inspections and audits, investigates incidents, monitors emergency response procedures, regulates the exploration, development and production of hydrocarbon resources in non-accord frontier lands, and develops regulations and guidelines with respect to the above.

Information Management

The Information Management Business Unit is responsible for developing and implementing an information management strategy for the Board and disseminating the information required by internal and external stakeholders. Its responsibilities include internal and external communications, library services, corporate records management, mail services, access to information, document production services, and Board-wide computer services.

Corporate Services

The Corporate Services Business Unit provides those services necessary to assist the Board in its management of human, materiel and financial resources. Its responsibilities include corporate policy and planning activities, materiel and facilities management, staffing, training, compensation and benefits, procurement, inventory control, physical security, and union/management activities.

Executive Office

The Executive Office is responsible for the Board's overall capability and readiness to meet strategic and operational requirements including legal advice for both regulatory and management purposes, maintaining and enhancing technical expertise within the Board in the economic, environmental and engineering fields, and hearing administration and regulatory support.

LIST OF ABBREVIATIONS

Alliance	Alliance Pipeline Ltd.
AVC	assurance of voluntary compliance
BC Gas	BC Gas Utility Ltd.
BC Hydro	British Columbia Hydro and Power Authority
Board or NEB	National Energy Board
CAPP	Canadian Association of Petroleum Producers
Cartier	Cartier Pipeline and Company, Limited Partnership
CEAA	Canadian Environmental Assessment Agency
CEA Act	<i>Canadian Environmental Assessment Act</i>
COGO Act	<i>Canadian Oil and Gas Operations Act</i>
CSA	Canadian Standards Association
CSR	Comprehensive Study Report
EMA	Energy Market Assessment
Enbridge	Enbridge Pipelines Inc.
ERF	Electronic Regulatory Filing
ESRF	Environmental Studies Research Funds
FAQ	frequently asked question
FERC	Federal Energy Regulatory Commission
GDP	Gross Domestic Product
GFR	<i>Guidelines for Filing Requirements</i>
GSX	Georgia Strait Crossing Pipeline Limited
IPL	international power line
Line 9	Enbridge's crude oil pipeline from Montreal to Sarnia
M&NP	Maritimes and Northeast Pipeline Management Ltd.
Manitoba Hydro	Manitoba Hydro-Electric Board
MOU	Memorandum of Understanding
NB Power	New Brunswick Power Corporation
NEB or Board	National Energy Board
NEB Act	<i>National Energy Board Act</i>
NGL	natural gas liquids
NOVA	NOVA Gas Transmission Ltd.
OPEC	Organization of Petroleum Exporting Countries
OPR-99	<i>Onshore Pipeline Regulations, 1999</i>
PDF	Portable Document Format
Powerex	British Columbia Power Exchange Commission
RTO	regional transmission organization
SGML	Standard Generalized Markup Language
Sumas	Sumas Energy 2 Inc.
TMPL	Trans Mountain Pipeline Company Ltd.
TransCanada	TransCanada PipeLines Limited
TSB	Transportation Safety Board of Canada
Vector	Vector Pipeline Ltd.
WCSB	Western Canada Sedimentary Basin
Westcoast	Westcoast Energy Inc.
WTI	West Texas Intermediate

metric conversion table

The Board uses the International System of Units. The energy content of a 30-litre tank of gasoline is approximately one gigajoule. A petajoule is one million gigajoules. On average, Canada consumes about one petajoule of energy every 50 minutes for all uses (heat, light and transportation).

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

Approximate Conversion Factors

metre	=	3.28 feet
kilometre	=	0.62 mile
hectare	=	2.47 acres
cubic metre of oil	=	6.3 barrels
cubic metre of natural gas	=	35.3 cubic feet
gigajoule	=	0.95 thousand cubic feet of natural gas at 1 000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
gigajoule	=	10^9 joules
petajoule	=	10^{15} joules
gigawatt hour	=	10^6 kilowatt hours
terawatt hour	=	10^9 kilowatt hours



